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ANALYTIC SYSTEM

FOR THE

MEASUREMENT

OF

RELATIVE FIRE HAZARD

(Mercantile Classes)

EDITION
DECEMBER, 1906

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CHICAGO

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31K

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PREFACE.

The practical fire-underwriter is seldom interested in abstractions. The necessities of his calling demand a tariff that will measure fire-hazard satisfactorily to all concerned, and without caring to know the whys and wherefores of the reasoning process which creates this tariff, his sole enquiry is apt to be, Will it work?

Unfortunately many of the tariffs constructed in the past have refused to work, and that none of them has worked satisfactorily for any length of time is shown by the unending succession of new tariffs with potentialities for good or evil which no man can foresee.

This is especially true of the mercantile class, composed as it is, of the intermingled hazards, resulting from external exposures and multiple occupancies, found in the business districts of towns and cities. The task of constructing a satisfactory and enduring mercantile schedule has perplexed the best minds in the fire underwriting world for more than a generation and the results achieved have not been such as to commend themselves to either the buyers or sellers of fire indemnity. A few years since it was hoped that the Universal Mercantile Schedule had solved the problem. This system abrogated the differentials in state basis rates along with the classification of structure and municipal protection, but the re-establishment of these things one by one in later tariffs is *prima facie* evidence that the solution of the tariff problem does not lie in the banishment of classification.

Without attempting to explain the rationale of the tariff in the following pages, and irrespective of its merits or demerits, it is proper to say that it has been built upon an independent line of reasoning, so widely different from all precedent, that it is at least entitled to be called a system—this is no less true because of the fact that the underlying principles upon which the tariff has been constructed are equally available for the construction of basis tariffs of classes other than mercantile.

Exposure and Occupancy constitute the real substance of fire hazard. The building is an inclosing or intervening body which, according to its fire resisting qualities, serves to segregate hazard. It is not causative—does not in itself start fires, but as a medium may contribute to their spread or repression

While a reasonable analysis of structural features is indispensable, it is safe to say that any tariff that carries the analysis of building to the last extreme, while dismissing occupancy and exposure with rule-of-thumb treatment, *is an incomplete tariff.*

An examination of the contents of this tariff will convince the most sceptical that whatever faults it may have, these important elements of hazard have not been evaded. Rules are not laid down and left for the practical rater to discover their absurdity. Exposures are followed in all their ramifications and the rules actually applied to illustrative diagrams. That these formulas have, in large measure, the equational truth of mathematics is obvious from the fact that long blocks of buildings of the most varied structure and occupancy solidly built, or separated by irregular spaces, have been figured out independently by different raters with results identical for every building in the block. It might be claimed, perhaps, truthfully, that the rates so established were too high or too low, but this criticism does not go to the method, for it would simply involve such slight modification of the ratios upon which the exposures were figured, as judgment might suggest. The vital fact is that the formulas provide a uniform and unquestionably logical method of figuring exposures in thousands of situations where in the past raters have had no landmarks whatever for their guidance.

In the matter of occupancy there is no evidence that classification has played more than a rudimentary part in any existing tariff. In any event the classification of occupancy found in the appendix of this tariff is the first that has been made with reference to the three phases of causation—cause, medium and effect. The cause that starts a fire is a thing apart from the medium that spreads it, and many of the inconsistencies in existing tariffs are plainly traceable to their failure to differentiate the cause from the medium upon which it acts. Nothing in the purview of physics is more plainly implicated in the three links of causation than fire hazard, and that a classification upon this basis is soundly logical is shown by the numerous instances where this classification has clarified the muddle produced by tariffs in which cause and medium are treated as one and inseparable.

The classification of damageability appearing in the column of effects (No. 3 in Brick Tariff) was constructed upon a line of reasoning—explained in appendix—which for the first time establishes a differential between building and contents that may be satisfactorily accounted for.

From small beginnings the use of the system, during the past two years, has spread into a dozen or more Western and Southern States, where it has become the recognized tariff for rating the mercantile classes under the several grades of municipal protection. This in itself seems to be an adequate answer to the ques-

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tion, Will it work? but in view of the temporary nature of tariffs in the past, there remains another question, vastly more important to underwriting interests and that is, Will it continue to work? This involves the question whether, like all existing tariffs, it is something in the nature of an eight day clock that cannot be rewound, or a thing that will continue to perform its functions with unimpaired accuracy next year or for that matter during the next century. Permanency is the real desideratum in a tariff, which should be an instrument for the measurement of fire hazard for all time, just as the clock, compass, thermometer or foot-rule are permanent instruments of measurement in their respective specialties.

In this connection it is proper to suggest the truism that fire underwriting is a business transacted upon averages. Fire hazard as a whole is a compound, not of dissociated but of related parts, and each part is as amenable to the law of averages as the total composed of all these parts. If, under the law of averages, a thousand buildings of given construction, occupancy and protection will show a given ratio of loss to value during a given period, under the same law a thousand flues, hatchways, sky-lights, well-holes, wooden ceilings, or other parts of the building, of given construction, will each contribute its unvarying quota of this ratio, hence the several parts stand in a position of unchanging relativity, not only to the whole but each to the others. Fire hazard is, by nature, a net work of relativity. In constructing a basis schedule we necessarily select certain features of hazard as separable and attach to each of these a charge, while to the residue consisting of unanalyzable parts we attach a lump charge and call it a basis rate. There is no intrinsic difference between the charge we call a basis rate and the other charges excepting that it includes all things too obscure, indefinite or unimportant to schedule. If under the law of averages the relativity between the whole and its parts does not change, and the relativity among the several parts themselves is constant, it follows that each charge bears an unvarying relation to the basis rate, or, conversely, the basis rate a constant relation to the other charges. This being the case it is false logic to treat the basis rate or any of the charges as a dissociated element of hazard, for every change in basis rate or charge involves a disturbance of their mutual relativity. The real question in establishing every charge is, What ratio of the total loss will this feature of hazard under the law of average probably contribute? When this ratio has been established by judgment and experience, it should take its place in every schedule as a fixed ratio bearing a constant relation to the whole and its several parts. This end may be reached by making all charges percentages of some common standard and the natural, in fact, only possible standard for this purpose is the basis rate, because it enters into every rate while other charges do not. It is true that certain features of hazard are not related in the same way as others, and their exceptional relativity must be recognized and dealt with. These features embrace protection, public and private, and the differentials between the hazard of contents and building. Protection spreads over all the factors of hazard and a credit for protection should apply to the sum of hazard and not to the basis rate, while damageability is implicated with protection and location and must be dealt with separately.

This principle of relativity is recognized by every existing tariff, not systematically but incidentally. Liberal reductions are made from the total rate for features of occupancy, structure, co-insurance and private protection, but none of these tariffs recognizes municipal protection as entitled to similar treatment, and as a consequence many of the charges under the higher grades of protection are relatively 50 to 100 per cent. higher than under the lower grades of protection.

A tariff constructed of fixed charges and credits, in other words, a tariff in which the principle of relativity is not recognized must, of necessity, be an unstable compound of unrelated parts. It cannot be expected to serve its purpose for any length of time because every important change in loss ratios, which are always changing, necessitates its reconstruction or abandonment through a percentage advance or reduction which, applied, as it is, to rates out of relation to each other breeds trouble.

A tariff built upon the corner stone of relativity, when once established, becomes an organic whole—an instrumentality of logically related parts which no future exigencies of the business need ever disturb. It becomes a permanent instrument for measuring hazard, and while it is conceivable, even probable, that a new tariff so constructed may require a period of adjustment to develop consistency in all its parts, when this consistency has been finally established to conform to the best underwriting judgment, it becomes a finished structure—a permanent body of relations for the measurement of fire hazard. While it may become necessary from time to time to insert some new charge or credit to fit an innovation in hazard, aside from this necessity it is safe to assume that, once completed, it will be as unnecessary to rebuild a tariff so constructed as it is to rebuild the compass, chronometer or thermometer.

In the light of these facts, and the severe tests to which this system has been subjected, there is no reason to suspect that it will not continue to measure relative fire hazard satisfactorily for

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an unlimited period in the future, upon any desired basis, in any state, town or city and under all grades of municipal protection.

It further contains the quality of absolute flexibility—not the flexibility of fits and starts which jolts the rating machinery out of order and makes it necessary to lie up an indefinite period for reconstruction or repairs, with every important fluctuation in loss ratios, but a ready adaptability which permits of instant adjustment to existing conditions, either local or general. While permitting utter freedom of judgment in its adjustment to these conditions, the system possesses the novel and invaluable feature of recording accurately every departure from an established norm of relativity, which makes it possible to determine by comparison every inequality made necessary by the exigencies of the business, and reveals with precision what is necessary to restore a proper relativity.

No claim is made that it is a finality, but any tariff possessing these qualities and potentialities may well be excused for minor faults. The principles upon which it is built are enduring and the results of its use in actual rating justify the assertion that it has safely passed the ordeal of experimentation as a practical working tariff.

When these principles come to be better understood, they cannot fail to win general approval and there is no reason to doubt that underwriting intelligence will then join in perfecting the system to a point where, through the sheer force of its reasonableness, all concerned will be compelled to rely upon its measurements of fire hazard with the same faith they repose in other universally accepted systems of measurement.

In closing, it is proper to add that the tariff does not embrace fire proof buildings and contents which contain a distinct body of relations entitled to independent treatment.

BRICK TARIFF

EMBRACING

BRICK AND STONE, METAL AND SHINGLE ROOF
BUILDINGS AND THEIR CONTENTS.

STANDARD STRUCTURAL FEATURES.

For buildings with brick or stone walls.

In the following analysis, buildings are classed as:

1. *Hallway Construction, i. e.,* buildings in which all openings between stories are in separate hallways (communicating with street).
2. *Ordinary Construction, i. e.,* buildings in which openings between stories, in whole or in part, are not situated in separate hallways, as above.

The standard for structural features of a building is determined as to *walls, floorways* and *area,* by occupancy, which is divided into Light and Ordinary. All occupancies not mentioned in the following list of Light Occupancies are to be treated as Ordinary Occupancies.

List of Light Occupancies.

1. Agent's Sample Rooms.
2. Banks.
3. Barber Shops.
4. Churches.
5. Cobblers.
6. Dwellings, Flats or guest rooms of Hotels, Clubs or Lodging Houses.
7. Halls, including dance, lodge and private club halls or rooms.
8. Offices, business, professional, railway, insurance, telegraph, detective, architects, etc., (including private libraries or small private printing offices connected therewith).
9. Parlors, millinery, dressmaking, massage, etc., (not over 10 hands).
10. Schools.
11. Stands, news, tobacco, fruit, flower, railway-ticket, etc.
12. Studios, teachers, artists, class rooms, etc.
13. Tailors (no stocks, not over 10 hands).
14. Sleeping rooms of proprietor or clerks.
15. Also small stocks not exceeding 600 sq. ft. area, for which charge in column 1 of Alphabetical List is 5% or under.

The following standards apply to all buildings, whether occupancy is Light or Ordinary:

Ground floor area not over 1,000 square feet.

Roof. Metal, tile, slate or approved composition covered with gravel.

Attachments (Exterior). Building to be free from wooden cornices, awnings, porches, stairways, monitors, bridges or frame additions.

Ceilings. Ordinary lath and plaster, or metal, on joists of usual dimensions and arrangement.

Skylights. Frame to be of iron or steel, with wire-glass or quarter-inch-thick glass, the latter to be protected by wire netting. In towns of grades 4, 4½, 5 and 6 wire netting may be waived for skylights less than 40 square feet.

Chimneys and Flues. To be of brick, built from ground, or may be ledged in walls of approved construction.

Partitions. Between ground floor and (or) basement occupancies to be brick, tile or other equally fire-resisting materials.

A Standard Parapet. On all exposed walls parapet should be same thickness as standard wall of upper story, coped with stone, cement or terra cotta, and rise not less than 18 inches above roof on buildings of 3 stories and under, or 36 inches on buildings of 4 stories or over.

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Standard Fire Doors and Shutters to conform to National Board standards.

Wire-glass windows of N. B. standard to be treated as equivalent to standard fire shutters.

(Approved fire doors or shutters are those that do not meet the requirements of above standard, but in the judgment of the rater constitute an adequate cut-off in view of the character or distance of exposure. For interior openings, only standard doors should be treated as approved.)

A Standard Fire Wall should be of brick or stone of standard thickness with standard parapet. All exposed exterior openings, and openings between communicating occupancies (where division walls extend above roof), to be protected by standard fire doors and shutters per specifications of National Board.

The following standards for Walls, Floorways and Floorway Retinues are established by occupancy (light or ordinary), as defined, page 10.

STANDARD WALLS.

With reference to thickness of walls a building must be treated as one or the other, *i. e.,* as either wholly Light or wholly Ordinary occupancy construction. If all occupancies above grade floor are Light, wall thickness should be figured for light occupancy and, if not, the walls must conform to ordinary occupancy standard (see note concerning hotels, page 13.)

(*Supporting Walls.*)

In Buildings of Light Occupancy, to be 12 inches thick for two upper stories, increasing 4 inches for each story below up to 24 inches.

In Buildings of Ordinary Occupancy, to be 12 inches thick in top story, increasing 4 inches for each story up to 28 inches, or if ledged for top floor, may be the same thickness required for Light Occupancy Buildings.

Party or division walls not ledged on both sides, to be 4 inches thicker than the above requirements up to 28 inches for light and 32 inches for ordinary occupancy.

Stone walls to be 4 inches thicker than brick walls.

The following table, showing average thickness of supporting walls required by above standards, will be found convenient for reference:

Height of Building.	Exterior and Ledged Party Walls.		Stone Walls and Party Walls Not Ledged.	
	Ordinary Occupancy	Light Occupancy	Ordinary Occupancy	Light Occupancy
1 story........	12	12	16	16
2 stories.......	14	12	18	16
3 stories.......	16	13	20	17
4 stories.......	18	15	22	19
5 stories.......	20	17	24	21
6 stories.......	21	18	25	22
7 stories.......	22	19	26	23
8 stories.......	23	20	27	24
			Stone Party Walls to be 4 inches thicker than above.	

When outside wall is of pier construction the piers should be 4 inches thicker than the average shown by above table, the faces of piers to measure not less than one-fourth as much as the spaces between centres; walls between piers to be not less than 12 inches thick.

Deficiency in thickness of piers or wall between piers to be charged as for other supporting walls.

When other walls are braced by pilasters, if the wall itself between pilasters is used for floor support, charge for deficiency in thickness of wall may be reduced one-half.

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Non-supporting Walls

should be of the thickness shown by following table:

	Exterior		Party	
	Ordinary Occupancy	Light Occupancy	Ordinary Occupancy	Light Occupancy
3 upper stories....	12	8	16	12
3 next stories.....	16	12	20	16
Stories below......	20	16	24	20

STANDARD FLOORWAYS.

(*Embracing flooring, joists and ceiling beneath*) grade as follows:

With reference to floorways and their retinues, each story should be figured separately, the occupancy of each floor determining the charge or credit according as the occupancy is Light or Ordinary.

A. Matched wooden flooring laid on joists of ordinary dimensions with lath and plaster, wood or metal ceiling beneath.
B. Same as A. Two layers of flooring.
B. (Open.) Same as B without ceiling, i. e., open between joists.
C. Floorways of so-called semi-slow-burning construction, no concealed spaces.
D. Floorways of slow-burning construction of N. B. Standard.

STANDARD FLOORWAY RETINUES.

NOTE: The openings of each floorway will for convenience be referred to as its *Retinue.* The grade of each retinue is that of its weakest factor. If, for example, one factor of a retinue grades as ***a.*** and another as *b.* the retinue should grade as *a.*

Rater should seek the opening with lowest grade of protection and grade the retinue of each floorway accordingly.

Wooden Chutes, Dumb Waiters or Ventilating Shafts to be provided with approved self-closing doors at each opening, those over vertical openings to be held open by a fusible link, as for **hatchways,** which see. These openings grade as follows:

(*a.*) Lath and plaster, or single thickness of ordinary matched flooring, with doors of same material.
(*b.*) Two thicknesses of matched flooring. Doors same.
(*c.*) Metal or metal-clad inside and out. Doors same.

Well Holes or Light Shafts to be protected as follows:

(*a.*) By heavy glass (¼ in.) in metal frames.
(*b.*) By heavy glass (¼ in.) in metal frames protected by wire netting.
(*c.*) By wire-glass, N. B. standard.

Open Elevators, Hatchways or Stairways to be protected by an automatic or self-closing trap-door, as follows:

(*a.*) Of matched flooring, ⅞ in. with batten screwed on.
(*b.*) Of double flooring battened.
(*c.*) Same as *b* with approved tin-cladding on under side.

Enclosed Elevators and Stairways (not in hallways communicating with street) are graded according to their enclosures as follows: (Glass, if any, in door to be stationary and wire-glass.)

(*a.*) ***Enclosure*** of ordinary lath and plaster or matched flooring. ***Door*** of matched flooring and self-closing.

(*b.*) ***Enclosure*** of matched flooring, two thicknesses; ***door*** same, self-closing.

NOTE: Wooden enclosures are valid only for stairways. Elevators with enclosures (*a*) and (*b*) should also have a trap-door at each floorway and be graded by the trap-door instead of by above enclosures (see Open Elevators, page 12). If no trap-door, they should take the "below *a*" grade. (See page 23.)

(*c.*) ***Enclosure,*** either of the following:

1. Plaster or cement on both sides of metal lathing supported by iron frame. ***Door,*** standard metal or metal-clad, self-closing.
2. Terra Cotta, or other approved non-combustible material. ***Door,*** same as No. 1.
3. Same as ***b,*** metal-clad on both sides. ***Door,*** same as No. 1.

NOTE: Elevator doors as above, closed inside by elevator operator, may be accepted in lieu of self-closing doors for *c*, 1, 2, or 3.

(*d*) ***Brick shaft*** with standard fire doors, ventilation and drainage, as required by National Board standard for slow-burning buildings.

(Buildings with Hallways.)

In these buildings, floorways and their retinues should grade the same as with buildings of ordinary occupancy construction and the proper charge or credit applied for opening with lowest grade of enclosure regardless of whether the opening is in main building or hallway.

Floorway openings in halls, however, may be protected by the partitions separating the hallways from main buildings as well as by enclosures to openings. When this is the case, ***partitions*** may be treated as retinues and graded as follows:

1. Plaster or cement on metal lath and studding, or of tile, brick or other non-combustible materials, with self-closing standard metal or metal-clad doors, grade as equivalent to floorway retinue *b.*

2. Plaster or cement on metal lathing with self-closing doors of wood two inches thick, grade as equivalent to floorway retinue ***a.***

3. Ordinary wooden lath and plaster with wooden doors grade as equivalent to floorway retinue "below ***a.***"

When partitions and openings in floorway are not of like grade, the charge or credit applied from Retinue Table (page 23) should be for the better grade.

NOTE: *a.* When retinue consists of hallway partitions, it should be figured for same story as occupancy, but other floorway retinues should be figured for the floorway (or if top story for ceiling) above contents of each story.

b. When a story contains exclusively Light Occupancies, its retinue, if consisting of hallway partitions, as above, may be counted as one grade higher, i. e., if "below *a*" as *a*, if *a* as *b*, or if *b* as *c*. Open cocklofts in hallways, however, should be treated as if in main building (see note after Retinue Table, page 23).

c. ***Hotels, Apartment or Lodging Houses and City Club Houses.*** Figure walls as for light occupancy for entire building and floorways and their retinues as for ordinary occupancy.

MEMORANDA OF SLOW AND SEMI-SLOW BURNING CONSTRUCTION.

Slow Burning or Mill Construction Buildings.

This standard, as defined by National Board, requires all floorways to be without openings, though buildings are often found with openings, which in other respects conform to the slow-burning standard. On the other hand, some buildings conform to the slow-burning standard as to floorway openings, which are deficient in other features. The treatment of floorways and their openings in the structural part of this tariff permits of a separation of the features mentioned so that a charge or credit may be applied to either, independently of the other.

When a building complies in all respects with the standard for Slow-Burning construction, credit *k*, page 61 should be applied; also credit for retinue *Dd* from Floorway Retinue Table, page 23, or when the openings are of a lower grade than *d*, the credit or charge, as the case may be, from same table should be applied acording to the character of the retinues.

When a building, in features other than floorway openings, is below the slow-burning standard but is not below the standard for semi-slow-burning buildings, as defined in the next section, credit *l*, page 61 should be applied; also proper credit or charge from Floorway Retinue Table, page 23, according to the character of the Retinues.

Semi-Slow-Burning, Semi-Mill or Heavy Construction.

A semi-slow-burning building may have double floorways not less than 3 inches (if adequate for their load), supported by metal posts if protected by cement or terra cotta sheathing, or it may be deficient in cross section of supporting wooden posts, beams, or girders, also in cornice or in self-releasing beams or iron-bearing plates in supporting walls, but in other respects should conform to the standard for slow-burning construction.

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DIRECTIONS FOR BRICK TARIFF.

Note: *When not otherwise specified, all charges and credits are percentages of Basis Rate.*

(To Rate Buildings of Single Occupancy.)

Enter on rating slip the basis rate and all charges and credits connected with building and stationary power.

Next refer to classified list of occupancies and enter the charges for occupancy found in columns 1 and 2. The difference between the total of the debit and credit columns in rating sheet will show the percentage of basis rate to be added to it in order to obtain the occupied rate of building, which should then be reduced by credits, if any, for protective features, found in Table of Credits (page 61).

To rate contents of single occupancy buildings, refer to Contents Tables and add to the occupied building rate the amount indicated by the insignia (D 1, 2, 3 or 4, as the case may be) according to the grade of protection and location of contents in building.

(To Rate Buildings of More Than One Occupancy.)

Enter on rating slip the basis rate and all charges and credits connected with building and stationary power.

Then refer to classified list of occupancies and find the total of charges connected with all occupancies in column 1, adding this total to the highest charge connected with any occupancy in column 2. Enter the total in debit column of rating sheet. Foot up the two columns and the difference between the totals will show the percentage to be added to the basis rate to obtain occupied rate of building.

To rate contents of multiple occupancy buildings, add to the occupied building rate for each occupancy as indicated by its insignia in column 3.

EXTERNAL EXPOSURES.

For rules in regard to external exposures consult Exposure Formulas.

BASIS RATES.

NOTE: The following basis rates are computed from the standard of a one-story "B" building in an unprotected town and the tables range from 60 cents to $1.20 per $100, as indicated by the large figures at the head of each table. For example, table No. 60 is computed upon the basis of 60 cents.

A similar series of tabulations for contents has been computed and, as a rule, the Contents Table applied should bear the same number as the Basis Rate Table, though the tariff should be tested in each state by trying the different Basis Rate and Contents Tables until the proper level of rates has been found. The differential between contents and building may be increased or decreased at discretion by using a higher or lower Contents Table.

The range of the tables is probably sufficient to cover the entire country, though, if necessary, additional tables may be computed upon any desired standard, as directed in Appendix.

When parts of the same building have not the same number of stories, use the basis rate of the higher part.

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PROTECTION.

HEIGHT.	Class 1	Class 2	Class 3	Class 4	Class 4½	Class 5	Class 6
1 story	$0.33	$0.37	$0.42	$0.47	$0.52	$0.57	$0.60
2 stories	.34	.39	.44	.49	.54	.59	.63
3 "	.36	.40	.46	.52	.57	.62	.66
4 "	.38	.43	.49	.55	.61	.66	.70
5 "	.41	.47	.53				
6 "	.46						
Increase for each add'l story	.07	.07	.07	.07	.07	.07	.07
Decrease if no basem'nt	.02	.02	.02	.02	.03	.03	.03

65

PROTECTION.

HEIGHT.	Class 1	Class 2	Class 3	Class 4	Class 4½	Class 5	Class 6
1 story	$0.35	$0.40	$0.45	$0.51	$0.56	$0.61	$0.65
2 stories	.37	.42	.47	.53	.59	.64	.68
3 "	.39	.44	.50	.56	.62	.67	.72
4 "	.41	.47	.53	.60	.66	.72	.76
5 "	.45	.51	.57				
6 "	.49						
Increase for each add'l story	.08	.08	.08	.08	.08	.08	.08
Decrease if no basem'nt	.02	.02	.02	.03	.03	.03	.03

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PROTECTION.

HEIGHT.	Class 1	Class 2	Class 3	Class 4	Class 4½	Class 5	Class 6
1 story	$0.38	$0.43	$0.49	$0.55	$0.60	$0.66	$0.70
2 stories	.40	.45	.51	.58	.63	.69	.74
3 "	.42	.47	.53	.60	.66	.73	.77
4 "	.44	.50	.57	.64	.71	.77	.82
5 "	.48	.55	.62				
6 "	.53						
Increase for each add'l story	.09	.09	.09	.09	.09	.09	.09
Decrease if no basem'nt	.02	.02	.02	.03	.03	.03	.04

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PROTECTION.

HEIGHT.	Class 1	Class 2	Class 3	Class 4	Class 4½	Class 5	Class 6
1 story	$0.41	$0.46	$0.52	$0.59	$0.65	$0.71	$0.75
2 stories	.43	.48	.55	.62	.68	.74	.79
3 "	.45	.51	.57	.65	.71	.78	.83
4 "	.48	.54	.61	.69	.76	.83	.88
5 "	.52	.59	.66				
6 "	.57						
Increase for each add'l story	.09	.09	.09	.09	.09	.09	.09
Decrease if no basem'nt	.02	.02	.03	.03	.08	.04	.04

80

PROTECTION.

HEIGHT.	Class 1	Class 2	Class 3	Class 4	Class 4½	Class 5	Class 6
1 story	$0.43	$0.49	$0.55	$0.63	$0.69	$0.75	$0.80
2 stories	.46	.52	.58	.66	.73	.79	.84
3 "	.48	.54	.61	.69	.76	.83	.88
4 "	.51	.57	.65	.73	.81	.88	.94
5 "	.55	.62	.71				
6 "	.61						
Increase for each add'l story	.10	.10	.10	.10	.10	.10	.10
Decrease if no basem'nt	.02	.03	.08	.08	.04	.04	.04

85

PROTECTION.

HEIGHT.	Class 1	Class 2	Class 3	Class 4	Class 4½	Class 5	Class 6
1 story	$0.46	$0.52	$0.59	$0.67	$0.73	$0.80	$0.85
2 stories	.48	.55	.62	.70	.77	.84	.89
3 "	.51	.57	.65	.73	.81	.88	.94
4 "	.54	.61	.69	.78	.86	.94	1.00
5 "	.59	.66	.75				
6 "	.65						
Increase for each add'l story	.10	.10	.10	.10	.10	.10	.10
Decrease if no basem'nt	.02	.03	.03	.03	.04	.04	.04

90

PROTECTION.

HEIGHT.	Class 1	Class 2	Class 3	Class 4	Class 4½	Class 5	Class 6
1 story	$0.49	$0.55	$0.62	$0.71	$0.78	$0.85	$0.90
2 stories	.51	.58	.66	.74	.82	.89	.95
3 "	.54	.61	.69	.78	.85	.93	.99
4 "	.57	.65	.73	.82	.91	.99	1.05
5 "	.62	.70	.79				
6 "	.68						
Increase for each add'l story	.11	.11	.11	.11	.11	.11	.11
Decrease if no basem'nt	.02	.03	.03	.04	.04	.04	.05

95

PROTECTION.

HEIGHT.	Class 1	Class 2	Class 3	Class 4	Class 4½	Class 5	Class 6
1 story	$0.52	$0.58	$0.66	$0.74	$0.82	$0.90	$0.95
2 stories	.54	.61	.69	.78	.86	.94	1.00
3 "	.57	.64	.72	.82	.90	.99	1.05
4 "	.60	.68	.77	.87	.96	1.05	1.11
5 "	.66	.74	.84				
6 "	.72						
Increase for each add'l story	.11	.11	.11	.11	.11	.11	.11
Decrease if no basem'nt	.03	.03	.03	.04	.04	.05	.05

100

PROTECTION.

HEIGHT.	Class 1	Class 2	Class 3	Class 4	Class 4½	Class 5	Class 6
story	$0.54	$0.61	$0.69	$0.78	$0.86	$0.94	$1.00
stories	.57	.64	.73	.82	.91	.99	1.05
“	.60	.67	.76	.86	.95	1.04	1.10
“	.63	.72	.81	.92	1.01	1.10	1.17
“	.69	.78	.88				
“	.76						
ncrease for each add'l story	.12	.12	.12	.12	.12	.12	.12
ecrease if no basem'nt	.03	.03	.04	.04	.04	.05	.05

110

PROTECTION.

HEIGHT.	Class 1	Class 2	Class 3	Class 4	Class 4½	Class 5	Class 6
story	$0.60	$0.67	$0.76	$0.86	$0.95	$1.04	$1.10
stories	.63	.71	.80	.90	1.00	1.09	1.16
“	.66	.74	.84	.95	1.04	1.14	1.21
“	.70	.79	.89	1.01	1.11	1.21	1.29
“	.76	.86	.97				
“	.84						
ncrease for each add'l story	.13	.13	.13	.13	.13	.13	.13
ecrease if no basem'nt	.03	.03	.04	.04	.05	.05	.06

120

PROTECTION.

HEIGHT.	Class 1	Class 2	Class 3	Class 4	Class 4½	Class 5	Class 6
story	$0.65	$0.74	$0.83	$0.94	$1.04	$1.13	$1.20
stories	.68	.77	.87	.99	1.09	1.19	1.26
“	.72	.81	.91	1.03	1.14	1.24	1.32
“	.76	.86	.97	1.10	1.21	1.32	1.40
“	.83	.94	1.06				
“	.91						
ncrease for each add'l story	.14	.14	.14	.14	.14	.14	.14
ecrease if no basem'nt	.03	.04	.04	.05	.05	.06	.06

Note: Theoretically, basis rates should be established upon the dimensions of building, including area as well as height, but this would cause wider extremes between the rates of small-area and large-area risks than public opinion or even underwriting judgment would at present sanction. Buildings of large dimensions are generally recognized by fire underwriters as "danger spots," but it is questionable whether, under the most moderate scale of increase in basis rates for combined area and height, the rates of large-area risks would not be advanced to a point which would fail to meet approval.

The charges in following area table may be used, along with other charges connected with building, as percentages of the basis rate, or the area charge may be figured as a separate percentage and added to basis rate, thus making a new dimensional basis rate to which all other charges as percentages of this should be added. This will give a rate based upon dimensions. Ultimately this method of securing adequate rates for large-dimension-risks will become an acknowledged necessity, but the time will probably not be ripe for this until experience has shown beyond question the real hazard inherent in these risks.

As this Tariff is simply intended as an instrumentality for the measurement of relative fire hazard, it is for underwriting judgment to determine when this method shall be adopted, the object of this note being to call attention to the fact that the tariff is equally available for either method.

a

CHARGES AND CREDITS.

All charges and credits to be percentages of basis rate unless otherwise stated.

1. TABLE OF AREA CHARGES.

a. Area charge should be applied to all buildings.

b. When the ground floor area exceeds the limits of the following table, the proper charge may be found from multiples of the areas provided, or by adding the charges of two or more areas. Either method will produce substantially the same result.

c. When parts of a building differ in the number of floors, take the sum of the charges for each section, according to its area and number of floors. This charge is a percentage of the basis rate of the part containing the greatest number of stories.

d. If building with brick or stone walls has a frame-mansard or shingle roof, increase area charge one-fourth.

e. Basement should not be counted as a floor unless occupied for active business purposes, or by hotel, apartment, lodging, or club house, for cooking, dining, laundering, storage or the generation of power, heat or light.

f. Count floors exclusively occupied by Light Occupancies as half floors. (See List of Light Occupanices, page 10.) This also applies to floors exclusively occupied as guest rooms in Hotels, City Club Houses and Lodging Houses

g. When a "B" building has a frame, iron-clad or brick-veneered ware room or addition (see Ware Rooms, page 25.)

Square feet of ground floor area.	One Floor	Two Floors	Three Floors	Four Floors	Five Floors	Six Floors	Seven Floors	Eight Floors	Nine Floors
1 m	...	2%	3%	3%	4%	4%	5%	5%	5%
2 m	2%	4%	5%	7%	8%	9%	9%	9%	10%
3 m	3%	6%	8%	10%	12%	13%	14%	14%	15%
4 m	4%	8%	11%	14%	16%	17%	18%	19%	20%
5 m	5%	10%	14%	17%	20%	22%	23%	24%	25%
6 m	6%	11%	16%	20%	23%	26%	27%	28%	29%
7 m	7%	13%	19%	24%	27%	30%	32%	33%	34%
8 m	8%	15%	22%	27%	31%	34%	36%	38%	39%
9 m	9%	17%	24%	31%	35%	39%	41%	42%	44%
10 m	10%	19%	27%	34%	39%	43%	45%	47%	49%
11 m	11%	21%	30%	37%	43%	47%	50%	52%	54%
12 m	12%	23%	32%	41%	47%	52%	54%	56%	59%
13 m	13%	25%	35%	44%	51%	56%	59%	61%	64%
14 m	14%	27%	38%	48%	55%	60%	63%	66%	69%
15 m	15%	29%	41%	51%	59%	65%	68%	71%	74%
16 m	16%	30%	43%	54%	62%	69%	72%	75%	78%
17 m	17%	32%	46%	58%	66%	73%	77%	80%	83%
18 m	18%	34%	49%	61%	70%	77%	81%	85%	88%
19 m	19%	36%	51%	65%	74%	82%	86%	89%	93%
20 m	20%	38%	54%	68%	78%	86%	90%	94%	98%

When area is between any two figures in this column select the nearer of the two. When exactly half way between take the average of the two.

Communicating Walls.

h. When a division wall has unprotected openings, diminish area charge one-tenth for each wall, not exceeding in all 30% of the charge.

j. When division walls to roof only are without openings, area charge may be reduced one-fifth for each wall, not exceeding in all 40% of the charge.

k. When both *h* and *j,* maximum reduction should not exceed 40% of area charge.

l. When a division or party wall has communicating openings see Communicating Occupancies, page 73.

WALLS.

2a. For each inch deficiency in average thickness, for each wall .... Add 1%

(Not cumulative with 2*c*, *d*, *e* and *f*.)

NOTE: When a *B* building adjoining another *B* building has no wall, but is built up against the facing wall of adjoining building, charge for each inch deficiency of average thickness from a standard independent wall, and charge adjoining building with deficit, if any, from the average thickness of a standard party wall.

2b *Parapets* (each) not standard:

1. If less than standard thickness, and (or) not properly coped .... " 2%
2. If deficient in height, 6 inches or less.......... " 2%
3. If deficient in height, over 6 inches.......... " 4%

When standard requires 36 inch parapet, the deficit named in 2 and 3 may be changed to 12 inches.

Parapet charge applies to all party walls and to buildings subject to exposure within vanishing distance from "ordinary exposures" (see Exposure Formulas).

(*Front or Rear.*)

(Double charge for 2*c*, *d*, *e*, or *f*, if side walls.)

2c. *If wood,* for each wall.......... Add 15%
Increase charge one-third for each story over one.

2d. *If iron-clad,* for each wall.......... " 12%
Increase charge one-third for each story over one.

2e. *If brick-veneered,* for each wall.......... " 9%
Increase charge one-third for each story over one.

2f. *If iron and glass,* not backed up solidly with brick, for each wall .... " 3%
Increase charge 2% for each additional story of iron or glass, or 1% for each story with brick walls resting on unprotected iron columns.

When a wall is supported by iron columns with brick supports less than 25 feet apart, charge 2*f* may be waived, except when wall is iron and glass above first story. When such buildings are free from iron columns and (or) plate glass, apply credit of 3%.

2g. *If plate-glass windows* of unusually large dimensions (say over 100 square feet) .... " 3%
Increase charge 2% for each story over one with such windows. (Cumulative with 2*f*.)

2h. *If bay windows*.......... " 3%
(Not cumulative with 2*c*, *d*, *e* or *f*, if same wall.)

ROOF.

3a. *If shingle*.......... Add 20%
(Not cumulative with charges 10*a*, *b*, *n*, or *p*.)

3b. *If wooden mansard,* one side.......... " 10%
Increase charge one-half for each additional side. If mansard is slate or metal-clad reduce total charge one-half.

The charge for mansard is not cumulative with 10*a*, *b*—if both are on same side of building, charge for mansard only.

3c. *If composition roof,* not covered with gravel.......... " 5%

CEILINGS.

4a. *Wooden ceilings,* for each story...................... Add 2%
(If walls as well as ceilings are so sheathed, increase charge one-half.)

4b. *Strawboard, Paper or Canvas Ceilings,* for each story.. " 5%
(If walls as well as ceilings are so sheathed, increase charge one-half.)

OPENINGS THROUGH ROOF.

5a. *Skylights* (not standard).
For largest or worst opening of 40 sq. ft. or less.... Add 3%
Increase charge for each additional 40 sq. ft. or greater part thereof.................................. 1%
For each additional skylight........................ Add 2%
(Maximum skylight charge, 15%.)

5b. *Photographer's Skylights* in roof and side wall (not standard) .... Add 5%
Increase charge for each additional 40 sq. ft. or greater part thereof.................................. 1%
(Maximum charge, 25%.)

5c. *Cockloft,* if communicating with floors below, through open hatchway, air or elevator shaft, see note after Floorway Retinue Table.

6. FLOORWAY RETINUE TABLE.

In the following table the sign (+) indicates a charge and the sign (—) a credit. Each is to be taken as a percentage of the basis rate and should be established by the opening in each floorway with the lowest grade of closure.

Each Floorway	Open Construction			With Concealed Spaces	
	D	C	B Open	B	A
With retinue *d*................	—3%	—2%	—1%	0	0
" " *c*................	—2%	—2%	—1%	0	0
" " *b*................	—1%	—1%	—1%	0	0
" " *a*................	—0%	—0%	—0%	0	0
With retinue below *a*..........	+3%	+3%	+4%	+5%	+5%
For each "below *a*" **opening over one up to double the charge..**	+1%	+1%	+1%	+1%	+1%

Note: The retinue of each story should be figured for the floorway above occupancy instead of the floorway which supports it (except hallway partitions which should be figured for same story). If openings into a cockloft they should be treated as floorway openings of same grade, whether in hallway or in main building.

PARTITIONS.

(Between Ground Floor or Basement Occupancies.)

8*a*.	***Lath and plaster,*** or wooden partition, for each	Add	3%
8*b*.	***Plastered on metal*** lathing, for each	"	1%
8*c*.	If partitions between ground floor and basement occupancies are standard, and all other partitions wire lathing and plaster	Deduct	2%

CHIMNEYS, FLUES AND STOVEPIPES.

(Increase charges 9*a* 9*e*, inclusive, one fifth for each additional flue or stovepipe, up to double the charge.)

9*a*.	If chimneys rest on floors, beams or joists	Add	5%
9*b*.	If chimneys rest on wooden brackets	"	5%
9*c*.	If tile, terra cotta, cement or brick on edge	"	10%
9*d*.	If stovepipes pass through roof or windows (safely arranged)	"	15%
9*e*.	If stovepipes pass through floors or wooden or lath and plaster partitions (safely arranged)	"	5%

NOTE: If through ceiling into cockloft or concealed space, double charges 9*c* and 9*d*.

EXTERIOR ATTACHMENTS.

Charges should be made when continuous with adjoining buildings or subject to exposure. Charges 10*c* to 10*p* inclusive should be made at discretion of rater for unusually large attachments whether building is exposed or not.

Charges 10*a* and 10*b* not cumulative with 2*c* or 2*d* if same wall.

10*a*.	Cornice (wood) cut off	Add			2%
10*b*.	Cornice (wood or hollow metal) not cut off	"			3%
	The charge for hollow metal cornice should be waived unless continuous with cornice of adjoining building.				
10*c*.	Awnings or porches (wood)	"	3%	to	5%
10*d*.	Back wooden sheds or porches with stairways (open)	"	3%	to	5%
10*e*.	Back wooden porches with stairways (enclosed)	"	5%	to	10%
10*f*.	Outside stairways (wood) open	"			2%
10*g*.	Outside stairways (wood) boxed	"			5%
10*h*.	Bridges (wood) enclosed	"			5%
10*j*.	Bridges (wood, clad with iron) enclosed	"			4%
10*k*.	Bridges of skeleton iron-clad, enclosed	"			2%
	When two buildings communicate through enclosed bridge without approved cut-off, treat as one building, waiving charges 10*h*, *j* and *k*, unless exposed by another building.				
10*l*.	Bridges (wood) with roof and open sides	Add			3%
10*m*.	Bridges (wood), without roof or sides	"			2%
10*n*.	Monitors or roof houses (wood), or large display signs on roof	"	5%	to	10%
10*p*.	Monitors or roof houses (wood, iron-clad)	"	3%	to	10%

NOTE: When monitor or roof house is roofed or sided with glass, the regular skylight charge is cumulative with charge 10*n* or 10*p*.

WARE-ROOMS.

(Frame, iron-clad or brick-veneered.)

When ware-room or addition communicates with main building, it should be figured as an area charge, to the main building, by the following percentages of *the basis rate of main building for each one hundred square feet of ground floor area of the ware-room.*

11*a*. If ware-room is frame or iron-sheathed frame...... Add 5%
(Maximum charge not to exceed 80%.)

11*b*. If ware-room is skeleton iron-clad or brick-veneered.. " 3%
(Maximum charge not to exceed 50%.)

a. *When ware-room is two-stories,* increase area charge one-half up to maximum.

b. *When more than one ware-room communicating through unprotected openings with an omnibus building,* charge for area of all, not exceeding maximum charge (see 11*a* and 11*b*).

c. All ware-rooms communicating through unprotected openings, take the same rate as the main building after area charge has been added.

Power Devices.

All charges for Motive Power, fixed or movable, should be made from Table of Charges for Power Devices in Appendix.

a

ALPHABETICAL LIST OF OCCUPANCIES

(BRICK TARIFF.)

NOTE: Before using the following list, it is advisable to read the Classification of Occupancy in Appendix.

a. All charges not specifically stated in the following list are to be made from the tables in Appendix.

b. When the words Power, Heat, Labor, etc., appear, their meaning is to be taken as follows:

Power—Charge should be made from tables in Appendix.

Heat—This word indicates that charges should be made for all heat-producing and utilizing devices found with the risk, as provided for by tables in Appendix. The general word "Heat" is used when all of these devices are likely to be connected with the risk, but when only one is usually found, it will be named in lieu of "Heat", as "Forge", "Furnace", etc.

NOTE: The words "Power", "Heat", etc., are always accompanied by the classification, as to combustibility, to indicate the proper charge. For example, Power (C. 2) signifies that whatever the power device may be, the charge is to be made from the proper table in Appendix.

Labor: Additional Labor—See note under Labor in Appendix.

c. The sign † shows that the occupancy is not classifiable and that the charges are established by judgment instead of by classification in Appendix.

d. The sign * indicates that the occupancy it accompanies is subject to combustion so rapid that the value of fire department protection is materially less than for ordinary risks. (See Appendix, page 23.)

In rating these risks, the basis rate should be increased by the following ratios and the total treated as a new basis rate, all charges being figured from this increased basis rate.

	Bricks.
Under 1st class Protection increase Basis Rate	30%
Under 2nd class Protection increase Basis Rate	25%
Under 3rd class Protection increase Basis Rate	20%
Under 4th class Protection increase Basis Rate	15%
Under 4½ class Protection increase Basis Rate	10%
Under 5th class Protection use Basis Rate of 6th class Town.	

a

ALPHABETICAL LIST.

a. *Combined Stocks*, consisting of merchandise of two or more different classes, may be graded as to combustibility by the higher, and as to damageability by the average shown by the charges for each class in Contents Tables. (For mixed or nondescript stocks not classifiable in this way, see Classes C 6 and D 5 in Appendix.)

b. Benches for private repairs or auxiliary work should be charged for as follows, if not provided for in list:

1. Metal work........................20%
2. Woodwork 30%
3. Painting 30%
4. Painting, occasional................10%

c. Over one day's supply of paints and oils kept in main building of industrial risks............20%

(When more than one occupancy in a building, charges *b* or *c* should be treated as cumulative.)

d. Consult After Charges, page 74, for remediable defects, faults of management, etc.

e. For merchandise in safes or vaults, see page 40, Appendix.

f. *Sub-Basements.*

1. In rating buildings with sub-basements, increase basis rate for each basement below the first the same amount that is deducted in Basis Rates Table for no basement.
2. Treat structural defects the same as other floors and area the same as first basement (see Section *e*, page 21).
3. To rate contents of first sub-basement, take the differential of third floor stock, and for each lower sub-basement take the differential of the next higher story. Average differential same as for contents occupying more than one story.

		1	2	3
99	**Academies** in Mercantile Buildings.......	10%		D 2
	b. Technical schools with apparatus....	10%		D 3
	c. Manual Training with Woodwork...	20%		D 3
100	**Advertising** Novelties, Stocks............	10%	20%	D 3
101	**Advertising** Novelties, Manufacturing. If paper, see Notions (paper). If leather, see Leather Sewing. If cloth, see Sewing Risks. If metal, see Machine Shops. If wood, see Woodworking.			
102	**Agents'** Sample Rooms. (Class damageability by nature of samples.)			
103	**Agricultural** Implement Stocks...........	5%	10%	D 2
	1. Labor (C. 2.)			
	2. Forge, portable (see Appendix).			
104	**Aluminum** Goods........................	3%	5%	D 1
105	**Apartment** Houses (see Dwellings).			
106	**Apothecaries** (see Drug Stores).			
107	**Architects** and Designers (Offices of)..... (Manuscripts and Designs should class as D. 4).			D 3
108	**Armories** in Mercantile Buildings.......	10%		D 2
109	**Art** Stocks and Artists' Materials.......	5%	10%	D 4
	1. Labor—framing (C. 2)			
110	**Art** Studios (business), with Enlarging...	5%	10%	D 4
	1. Labor—framing (C. 2)			
111.	**Artists'** Studios (professional). See Studios.			
112	**Artists** (wood carving) hand............	10%	10%	D 3
	1. Additional labor (C. 2)			
113	**Artificial** Flowers. (See Flowers).			
114	**Artificial** Limbs. (See Deformity Apparatus).			
115	**Asbestos** and Mineral Wool Stocks.......	3%	5%	D 1
	1. Labor (C. 1)			
	2. Power (C. 1).			
116	**Assayers** (small)	20%		D 3
116½†	**Assaying** Establishments	15%	20%	D 3
	1. Additional labor (C. 3)			
	2. Heat (C. 3).			

a

		1	2	3
117	**Athletic** Goods (see Sporting Goods).			
118	**Auction** Stocks	10%	20%	D 3
	(If highly damageable goods, class as D. 4).			
119	**Automatic** Machines, Slot, Chance and Cash Registers	3%	5%	D 3
	1. If repairing on small scale	10%		
120	**Automobile** Stocks			
	a. Electric, steam or gasoline machines (no gasoline on premises or in machines)	20%	40%	D 3
	b. *†Gasoline machines with gasoline in machines only	60%	40%	D 3
	1. Labor (repairing), Heat, etc. (C. 3½)			
	2. Charging, with electricity only, not produced on premises	20%		
	(Above charge is cumulative with charge for power if produced on premises, but not cumulative with Charges 3, 4, or 5.)			
	3. Charging with gasoline, gravity pressure	100%		
	4. Charging with gasoline, conveyed to building by hand	75%		
	5. Charging with gasoline, conveyed to building by pump	50%		
	6. Storage of gasoline in building, not to exceed one barrel	50%		
	7. Storage of gasoline in building, not to exceed 10 gals. in approved metal can	20%		
	8. If premises used as a public garage..	40%		
121*†	**Automobile** Garages, for storage and care of automobiles in use	100%	40%	D 3
	(If repairs or charging, apply Charges 1 to 7, inclusive, Automobile Stocks.)			
122	**Automobile** Supply Stocks	5%	10%	D 3
	(No machines.)			
123	**Awning and Tent Making.**			
	(See Sewing Risks.)			
131	**Bags** (textile) Stocks of	5%	10%	D 2
131½	**Bags** (paper) Stocks of	5%	10%	D 3
132	**Bag** Factories, Textile (see Sewing Risks)			
133	**Bag** Factories, Paper (see Box Factories, Paper).			
134	**Bag** Cleaning and Repairing (see Carpet Cleaning).			
135	**Bags,** Leather, Stocks	3%	5%	D 2
136	**Bags** (leather) Manufacturing (see Leather Sewing Risks).			
137	**Bakeries** (retail) not over 5 hands	10%	10%	D 3
	1. Furnace with oven (C. 2)			
	2. Furnace with cruller kettles (C. 2)			
138	**Bakeries** (wholesale), bread, cake and pies only, over 5 hands	15%	20%	D 3
	1. Additional labor (C. 3)			
	2. Power (C. 3)			
	3. Furnaces with ovens or kettles (C. 3)			
138½	**Bakeries** (wholesale), crackers, cookies, etc., over 5 hands	25%	40%	D 3
	1. Additional labor (C. 3½)			
	2. Power (C. 3½)			
	3. Furnaces with ovens or kettles (C. 3½)			

		1	2	3
139	**Baker** Goods (no baking)	5%	10%	D 3
140	**Baking** Powder Factories	10%	10%	D 2
	1. Additional labor (C. 2)			
	2. Power (C. 2)			
	3. Furnaces, if any (C. 2)			
141	**Banana** Ripening (see Fruit Stores, Wholesale).			
142	**Banks**			D 2
143	**Banner** and Flag Making (see Sewing Risks).			
144	**Barber** Shops	5%		D 2
	1. Hot water baths, if heat not produced by regular building heating plant, or outside	5%		
	2. Turkish Baths, if hot room, tiled floor, walls and ceiling	10%		
	3. If wood floor, lath and plaster walls and ceiling, heated by steam, hot water, or air pipes	40%		
	4. If same, as above heated by stove inside	70%		
	(Charge for Turkish Baths includes charge for Hot Water Baths). No charge for small Barber Shops in upper stories of Mercantile Buildings.			
145	**Barbers'** Supply Stocks (No manufacturing).	5%	10%	D 2
146	**Basket** and Willow-ware Stocks	10%	20%	D 3
147	**Basket** Making (hand) (No sawing or splitting).	25%	40%	D 3
	1. Additional labor (C. 3½)			
	2. Power (C. 3½)			
148	**Baths** (see Barber Shops).			
149	†**Batteries,** Storage and Accessories in use	10%		D 2
150	**Beer** Storage		5%	D 3
151	**Belting** and Hose Stocks (rubber or leather)	3%	5%	D 1
152	**Belting** and Hose Manufacturing (see Leather Sewing or Cutting).			
153	**Bicycle** Stocks (no repairing)	3%	5%	D 3
153½	**Bicycle** Stocks (with repairing)	5%	10%	D 3
	1. Labor, power, heat, etc. (C. 2)			
154	**Bicycle** Repair Shop	10%	10%	D 3
	1. Additional labor, power, heat, etc. (C. 2)			
155	**Billiard** Tables, Stock of	3%	5%	D 2
156	**Billiard** Saloons (no bar)	5%		D 2
157	**Bird** Seed (see Seed Stores).			
158	**Bird** Stores, including birds, live animals and fish	5%	10%	D 4
158½	**Bird** Stores, excluding birds, live animals and fish	5%	10%	D 2
159	**Blacksmith** Shops, 1 forge	40%	5%	D 1
	1. Additional labor and power (C. 1)			
	2. Increase for each addl. forge 8% to 80%.			
	3. Occasional hand wood-work repairs	30%		
	4. Occasional painting or repairs	10%		
160	†**Blacksmith** and Wagon Shops (1 forge).	60%	80%	D 2
	1. Increase for each addl. forge 12% up to 120%			
	2. Additional labor (C. 4)			
	3. Painting	30%		
	4. Trimming	30%		
	5. Power (C. 4)			

		1	2	3
161	†**Blind**, Sash and Door Stocks (not connected with Lumber Yards)...............	10%	20%	D 2
	1. Add for painting and glazing, occasional	20%		
	2. Power sanding without approved blowers, not over two machines........	60%		
	3. Power sanding, as above, with approved blowers....................	20%		
	4. Power (C. 3½).			
	(If more than 2 woodworking machines, see Woodworking.)			
162	**Boarding** Houses in Mercantile Buildings			
	1. Under 10 rooms....................	10%		D 2
	2. Under 20 rooms....................	20%		D 2
	3. Twenty rooms or over rate as Family Hotel.			
162½	**Boarding** Houses (Laborers')............			D 2
	1. Under 10 rooms....................	25%		
	2. Under 20 rooms....................	50%		
	3. Twenty rooms or over rate as transient hotel.			
163	**Bonnet** and Hat Frame Factories.........	15%	20%	D 3
	1. Additional labor (C. 3)			
	2. Power (C. 3)			
164	**Book** Bindery (no printing)..............	15%	20%	D 3
	1. Additional labor (C. 3)			
	2. Power (C. 3)			
	3. Furnace (C. 3)			
	Book Bindery with Printing (see Printers).			
165	**Book** Binders' Supplies	5%	10%	D 2
166	**Book** and Stationery Stocks..............	5%	10%	D 3
166½	**Bootblacking** Parlors...................	3%		D 2
167	**Boot** and Shoe Stocks (retail)............	5%	10%	D 2
168	**Boots** and Shoes (wholesale), including Rubber Goods.......................	3%	5%	D 1
169	**Boot** and Shoe Factories (see Leather, Sewing and Cutting Risks).			
170	**Bottle** Storage		10%	D 2
171	**Bottling** Cellars	5%		D 2
171½	**Bottling** Works.........................	10%	10%	D 2
	1. Add'l labor, power, heat, etc. (C. 2)			
	(If spirits are bottled rate as Soda Water Factory—see 814)			
172	**Bowling** Alleys	5%		D 3
173	**Box** Factories (cigar)....................	25%	40%	D 3
	No sanding or planing.			
	1. Additional labor, power, heat, etc. (C. 3½)			
174	**Box** Factory (paper).....................	25%	40%	D 3
	1. Additional labor (C. 3½)			
	2. Power (C. 3½)			
	3. Dry Rooms and Furnaces (C. 3½)			
175	**Brand** Stencil and Stamp Works (see Rubber Stamps).			
176	**Brass** Goods	3%	5%	D 1
177	**Brewers'** Supplies (mixed)	5%	10%	D 2
178	**Bric-a-Brac** and Curios (Stocks of)......	5%	10%	D 4
178½	*†**Broom** Corn Stored in Mercantile Buildings (not over 100 bales)............	20%	80%	D 3
179	*†**Broom** Corn Warehouses................	20%	160%	D 3
	1. Labor baling (C. 4½)			
	2. Power (C. 4½)			

		1	2	3
180*†	**Broom** Factories	100%	80%	D 3
	1. Additional labor (C. 4)			
	2. Power (C. 4)			
	3. Bleaching oven inside	100%		
	4 Painting or varnishing handles	30%		
181	**Broom** Makers (hand). Not over 2 hands, —small amount of material	50%	40%	D 3
	1. Bleaching oven (see Broom Factories).			
182*†	**Broom** Warehouses	20%	40%	D 3
183	**Brush** Factories	15%	20%	D 3
	1. Additional labor (C. 3)			
	2. Power (C. 3)			
	3. Furnaces (C. 3)			
	4. Pitching	30%		
	(If woodwork, see 948 and 949.)			
184	**Brush** Stocks	5%	10%	D 2
185	**Builders'** Materials, Storage (Lime, Hair, Cement, etc.)		40%	D 3
187	**Busheling** Shops (small)	5%	10%	D 2
188	**Business** Colleges (see Academies).			
189	**Butchers'** Supplies	5%	10%	D 2
190	**Butchers'** Shops. (No rendering or smoking in building)	3%	5%	D 3
	†1. Furnace (rendering) with kettle (C. 1)			
	2. Smoking meats, if not outside in detached brick outhouse or fireproof room communicating through approved fire door	100%		
	3. Same, in fire-proofed room in main building, communicating through approved fire door, or in patent metal smoker in main building (approved arrangement)	30%		
	4. Same, in communicating fire-proofed addition, with approved fire door	10%		
	5. Power (C. 1)			
	6. If sausage-making, 1 grinder, no charge.			
	7. Sausage smoking in metal smoke box	10%		
191	**Butter,** Cheese and Egg Stocks	5%	10%	D 3
	1. Butter churning, mixing and packing	10%		
	2. Power (C. 2)			
	3. For candling by artificial other than electric light in metal-lined room	10%		
	4. For candling by artificial other than electric light in the open	30%		
192	**Button** Stocks	5%	10%	D 3
193	**Button** Factories (cloth)	15%	20%	D 3
	1. Additional labor (C. 3)			
194	†**Button** Factories (pearl)	40%	10%	D 2
	1. Additional labor, power, etc. (C. 2)			
203	**Cabinet** Shops (see Carpenter Shops).			
204	**Candles,** Storage (in boxes)		10%	D 2
205	**Candy** Factories	25%	40%	D 3
	1. Additional labor (C. 3½)			
	2. Power and heat (C. 3½)			
	3. Open lights in starch room	30%		
206	**Candy** Shops (small) no manufacturing	3%	5%	D 3
207	**Candy** Stores (retail and wholesale)	5%	10%	D 3
	1. Labor (C. 2). No charge for 2 hands.			
	2. Power and heat (C. 2)			
208	**Canned Goods,** Stocks	3%	5%	D 1
209	**Canned Goods,** (Storage)		5%	D 1
210	†**Canning** Establishments	50%	20%	D 2
	1. Additional labor (C. 3)			
	2. Power (C. 3)			
	3. Furnaces and Kettles (C. 3)			
	4. If gasoline stored in building, not over one barrel	50%		
	5. If not over 10 gals. in approved metal *can*	20%		

		1	2	3
211	**Carpenter** Shops, see Woodworking.			
212	**Carpet** Cleaning Establishments	25%	40%	D 2
	1. Additional labor (C. 3½)			
	2. Power (C. 3½)			
	3. Gasoline Cleaning	50%		
	4. Gasoline stored in building, not over one barrel	50%		
	5. If not over 10 gallons in approved metal can	20%		
213	**Carpet** Linings and Mattings, paper or straw.	10%	20%	D 3
214	**Carpet** and Rugs, Stocks of	3%	5%	D 2
	1. Labor (sewing) (C. 1)			
	2. Power (C. 1)			
215	**Carpet** Weaving	10%	10%	D 2
	1. Additional labor (C. 2)			
	2. Power (C. 2)			
216	†**Carriage** and Wagon Repositories	5%	10%	D 2
	1. Forge, portable (see Appendix)			
	2. Repairing, if woodwork..........30%			
	3. Painting, occasional.............20%			
	4. Trimming 20%			
	5. Power (C. 2)			
	(If over 5 hands, see Blacksmith and Wagon Shops.)			
217	**Caskets** (see Undertakers' Supplies).			
218	**Celluloid** Goods, in original packages	10%	20%	D 3
219	**Cement**, Building (storage)		5%	D 3
220	**Cement** or Tile Drain Pipe (storage)		5%	D 1
221	**Chandeliers** (see Gas Fixtures).			
222	**Cheese** Stocks	3%	5%	D 2
	1. †If paraffining, labor, power, heat, etc. (C. 3)			
223*	†**Chemicals** with Acids (storage)	20%	160%	D 4
224	†**Chemists'** Laboratories (small)	20%		D 3
	Chemists' Laboratories (large), rate by analysis.			
225	**Chewing Gum** Factories	15%	20%	D 3
	1. Additional labor (C. 3)			
	2. Power, kettles, etc. (C. 3)			
226	**China** Decorating (painting only)	3%	5%	D 4
	1. Ovens (C. 1)			
	(If firing done in approved fire-proofed room, no charge.)			
227	**China** Ware (see Queensware).			
228	**Chinese** Stores (miscellaneous)	10%	20%	D 3
229	**Chinese** Stores (Ceramics only)	3%	5%	D 3
230	**Chocolate** and Cocoa (Stocks)	5%	10%	D 2
	1. Labor (C. 2)			
	2. Power and heat (C. 2)			
231	**Churches** in Mercantile Buildings	3%		
232	**Church** Furniture, class as			D 2

		1	2	3
233	**Church** Organs, class as			D 4
	(When Furniture and Organ included under one item, class as D. 3)			
234	**Church** Goods (ornamental, statuary, etc.)	5%	10%	D 3
234½	**Cider Mills, see Vinegar Factories (cider)**			
235	**Cider** and Vinegar in Barrels	3%	5%	D 1
236	**Cigar** and Tobacco Stocks (Small Tobacconists)	5%		D 4
	(No charge for small tobacco stands in office buildings, hotels, etc.)			
237	**Cigar** and Tobacco Stores and Smokers' Articles	5%	10%	D 4
	1. Labor (Cigar making) (C. 2)			
	2. Sweat Box, if any	20%		
237½	**Cigar** Factories	10%	10%	D 4
	1. Additional labor (C. 2.)			
	2. Sweat Box, if any	20%		
238	**Cigar** Box Factories			
	(See Box Factories, Cigar)			
239	**City** Halls or Council Rooms in Mercantile buildings	5%		D 2
240	†**Cleaning** and Dyeing Establishments	25%	40%	D 2
	1. Additional labor (C. 3½)			
	2. Power, Heat, Dry Rooms, etc (C.3½)			
	3. Gasoline Cleaning	50%		
	4. Gasoline, stored on premises, not over 1 bbl	50%		
	5. If not over 10 gals. in approved can	20%		
	If Charges 3, 4 and (or) 5 apply, risk should be starred.			
241	**Cloaks** and Women's Outer Garments (stocks of)	5%	10%	D 2
242	**Clocks,** Watches and Jewelry, Stocks (see also Jewelry)	3%	5%	D 3
243	**Cloths** (Woolen) Stocks of	3%	5%	D 2
244	**Clothing** Factories (see Sewing Risks)			
245	**Clothing,** Stocks of	5%	10%	D 2
246	**Clothing** Stores (second-hand)	10%	20%	D 3
247	**Club** Rooms (social), no Restaurant or Lodging	3%		D 2
	1. Add for Cooking	10%		
248	**Club** Buildings (City)	10%	10%	D 2
	1. Add for Lodging	10%		
	2. " " Cooking	20%		
	3. " " Laundry (Steam)	20%		
	(If Cooking, Laundry or Power in separate building, see remarks under Hotels (transient).			
249	**Coal** Offices			D 2
250	**Cobbler** Shops	3%		D 2
251	**Cocoa** (see Chocolate)			
252	**Coffee** Warehouses		5%	D 2
253	**Coffee,** Wholesale Stocks. No roasting or grinding	3%	5%	D 2
254	**Coffee** Stocks, with power grinding or packing	5%	10%	D 2
	1. Labor and Power (C. 2)			
	2. Grinding	10%		
	(If roasting, see charges under 256.)			
255	**Coffee,** Tea and Spice Stocks. No roasting or grinding	5%	10%	D 3
	If grinding, see 254 and Spice Stocks.			
256	†**Coffee** Roasting Establishments	10%	10%	D 2
	(*Arrangements.*)			
	Standard No. 1. Floor, concrete, brick or cement on iron I beams, or earth floor.			

		1	2	3
	Standard No. 2. Wood floor covered by two courses hollow tile, crossed with boiler iron on top.			
	Ceiling to be 5 ft. above roasters, if not brick arched.			
	Metal Suction blow pipes.			
	Charges.			
	1. Standard 1: Roasters, each 20% + 4% to 40%			
	2. Standard 2: Roasters, each, 30%+ 7½% to 60%			
	3. If floor not up to Standard 2, Roasters, each, 50% + 10% to 100%. (If gas is used for fuel, charges 1, 2 and 3 may be reduced one-half, except for natural gas)			
	4. If ceiling less than 5 ft. unprotected, not less than	50%		
	5. If ceiling less than 5 ft. protected by asbestos or metal, not less than	25%		
	6. If no blow pipe on cooling pans	50%		
	7. Additional labor (C. 2)			
	8. Power (C. 2)			
	9. Coffee Grinding (not cumulative with 10 or 11)	10%		
	10. Spice Grinding, not over one mill	30%		
	11. Spice Grinding, more than one mill	50%		
	12. Small patent portable roaster (approved device and arrangement)	20%		
	Increase charge one-fifth for each add'l roaster up to double the charge.			
	If gas used for fuel charge may be reduced one-half.			
	Blow pipe on cooling pans may be waived.			
257	†**Cold** Storage Warehouses	40%	10%	
	1. If candling by artificial other than electric light in metal-lined room	10%		
	2. Candling by artificial other than electric light in the open	30%		
	3. Power (C. 2)			
	4. Ice making, no charge.			
	Machinery and Fixtures class as			D 2
	Stock class as			D 3
257½	**Collar** Factories (horse) leather.			
	If moss or hair used for stuffing	25%	40%	D 2
	1. Additional Labor, Power, Heat, etc. (C. 3½)			
	If hay, straw, shucks, etc., either alone or in combination with above	40%	80%	D 2
	1. Additional Labor, Power, Heat, etc. (C. 4)			
	(For other charges see Leather Sewing Risks.)			
258	**Colleges** (see Academies)			
259	**Commercial** Schools (see Academies)			
260	†**Commission** Houses with Storage Warerooms, Grain Receivers	5%	10%	D 2
	Fruits, vegetables, poultry, eggs, butter, etc	10%	20%	D 3
	1. Candling by artificial other than electric light in metal-lined room	10%		
	2. Candling by artificial other than electric light in the open	30%		
	3. If poultry killing and packing, not over 3 hands, charge labor, heat, etc. (C. 3). If over 3 hands, rate as Poultry Packing Establishment.			
261	**Commission** Offices (no storage)			D 2
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		1	2	3
262	**Composing** (see Printers).			
263	**Confectionery** (see Candy).			
264	**Cooper** Shops (see Woodworking).			
265	**Copper** Goods	3%	5%	D 1
266	**Cordage** (see Twine, etc.)			
267	**Cork** (storage)		5%	D 1
268	**Cork,** Stocks	3%	5%	D 1
	1. Labor (cutting) (C. 1)			
	2. Power (C. 1)			
269	**Cornice** Works, see 536. (Small shops, not over 2 hands, rate as tin shops.)			
269½	**Corset** Parlors			D 3
270	**Corset** Stocks	5%	10%	D 3
	1. Labor (C. 2)			
	2. Power (C. 2)			
271	**Costumers'** Stocks (for hire or sale)	10%	20%	D 4
	1. Labor (sewers) (C. 3)			
	2. Power (C. 3)			
271½	**Cotton** Storage (in the absence of special schedule):			
	Not over 20 bales	10%	20%	D 3
	Not over 100 bales	20%	40%	D 3
	*Over 100 bales	20%	80%	D 3
	(When cotton is stored in same premises with a mercantile stock the above classification should be used for entire contents when higher than the classification of the stock itself.)			
272	**Country** Store Stocks	5%	10%	D 2
273	**Court** Rooms in Mercantile Buildings	5%		D 2
274	**Creamery** Supplies (stocks)	5%	10%	D 2
275	**Crockery** Warehouse, in original packages (see Queensware)			
276	**Curios** (see Bric-a-brac)			
277	**Cutlery** Grinding Shops without Stocks	5%	5%	D 3
	1. Additional labor (C. 1)			
	2. Power (C. 1)			
278	**Cutlery** Stocks	3%	5%	D 3
	1. Labor (grinding) (C. 1)			
	2. Power (C. 1)			

283	**Dance** Halls (see Halls).			
284	**Dairy** Products (see Butter and Cheese).			
285	**Decorations,** Flags, Banners, etc., Stocks of If manufacturing (see Sewing Risks)	5%	10%	D 3
286	**Deformity** Apparatus (Stocks)	5%	10%	D 3
286½	**Deformity** Apparatus (Manufacturing).			
	a. No power woodworking, except saws.	25%	40%	D 3
	b. With power woodworking	40%	80%	D 3
	1. Power, heat, additional labor, etc., with item *a* (C. 3½); with item *b* (C. 4)			

a.

		1	2	3
287	**Dental** Depots	5%	10%	D 3
	1. Storage of Nitrous Oxyde Cylinders.	10%		
287½	**Dental** Laboratories	5%	5%	D 3
	1. Add'l labor, power, heat, etc. (C. 1) (No charge for small cupel furnaces heated by gas.)			
288	**Dentists'** and Doctors' Offices, including instruments, materials, medicines and libraries			D 2
289	**Department** Stores	10%	20%	D 3
	In towns of 5th and 6th class, so-called Department Stores are equivalent to stocks of General Merchandise, which see.			
	In cities and towns of class 1, 2, 3, 4 and 4½ Department Stores vary so widely that each risk should be specifically treated according to the nature of the stock and industrial processes, if any (see Classification of Occupancies in Appendix C. 6), but no stock described as a Department Store should be rated less than above.			
290	†**Depots,** Railway. Not Terminal.			
	Passenger depots	10%		D 2
	Freight depots	20%	20%	D 2
	Freight and passenger depots	30%	20%	D 2
	Charges in columns 2 and 3 apply to merchandise in transit. If business occupancies in a depot, rate as if in an omnibus building.			
291	**Detective** Agencies (large)	10%		D 2
292	**Draperies,** Stocks of	5%	10%	D 3
	If manufacturing, see Sewing Risks.			
293	**Dressmakers,** not over 5 sewers			D 3
293½	**Dressmaking** Establishments, not over 10 hands	5%	10%	D 3
	†1. Additional labor (C. 1)			
294	**Dried** Fruit (storage). See Fruits, dried.			
295	**Drill** Halls (see Armories).			
296	**Drug** Stores (retail)	10%	20%	D 3
	1. Add for Paints and Oils	10%		
	(No charge for dry paints or paints in cans.)			
297	**Drug** Stores (wholesale). Dry Drugs, no compounding	10%	20%	D 4
298	**Druggists'** Sundries, only	5%	10%	D 2
299	**Druggists'** Sundries, with essential oils and fine chemicals	10%	20%	D 3
300*†	**Drug** Stores (wholesale) should be rated by restrictions, if any, embodied in policy form. If form contains no restrictions	40%	80%	D 4
	1. If manufacturing, labor, power, heat, etc. (C. 4)			
	2. If compounding with combustible or explosive materials, not less than	50%		
	3. Drug grinding, not over 1 mill	30%		
301	**Drugs,** Crude, with Herbs, etc. (stored)		10%	D 4
302	**Dry Goods** Stocks (retail)	5%	10%	D 2
	1. Labor, trimming, fitting, etc. (C. 2)			
303	**Dry Goods** Stocks (wholesale)	5%	10%	D 3
304	**Dry Goods** Warehouses, package goods only		5%	D 1
305	**Dwellings,** Flats or Apartment Houses in upper stories of Mercantile Buildings			D 2

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		1	2	3
306	**Dyeing** and Cleaning (see Cleaning and Dyeing).			
307	**Dye Stuffs** (Stocks)......................	10%	20%	D 3
314	**Egg** Storage		10%	D 3
	1. Candling by artificial other than electric light in metal-lined room	10%		
	2. Candling by artificial other than electric light in the open.........	30%		
315	**Elastic** Fabrics, Stocks..................	5%	10%	D 3
	1. Labor (C. 2)			
	2. Power (C. 2)			
316	**Electric** Belts, Stocks of................	3%	5%	D 3
	1. Labor (C. 1)			
	2. Power (C. 1)			
317	**Electrical** Supplies and small shops......	3%	5%	D 3
	1. Labor, shop work, (C. 1)			
	2. Power or furnaces (C. 1)			
319	†**Electro-plating** and Electrotyping Establishments	30%	10%	D 3
	1. Additional labor (C. 2)			
	2. Power, furnaces, dry room (C 2)			
	If wood working, see (948 and 949)			
320	**Embroideries,** Stocks of.................	5%	10%	D 3
	If manufacturing, see Sewing Risks.			
321	**Employment** Offices.			D 2
322	**Engravers** (wood)	10%		D 3
	1. Additional labor (C. 2)			
323	**Engravers** (metal)	5%		D 2
	1. Additional labor (C. 1)			
	2. If with print........................	10%		
324	**Envelope** Manufacturing	15%	20%	D 3
	1. Additional labor (C. 3)			
	2. Power, C. 3.			
	3. Printing	20%		
325	**European** Hotels (see Hotels).			
326	**Express** Offices	5%	10%	D 3
335	**Feather** Duster Stocks	5%	10%	D 3
	†1. Labor (C. 3)			
	†2. Power and furnaces (C. 3)			
336	**Feathers** and Flowers (Artificial). Small retail stocks	5%	10%	D 4
337	**Feathers** (wholesale)...................	10%	20%	D 4
338	**Feather** Stocks (Upholsterers)	5%	10%	D 2
	Sewing only, no cleaning, or renovating.			
	1. Labor (sewing) (C. 2)			
	2. Power (C. 2)			
339	**Feather** Stocks (upholsterers)...........	10%	20%	D 3
	With cleaning or renovating.			
	1. Labor (C. 3)			
	2. Power and furnaces (C. 3)			
	If shoddy, moss, tow or excelsior is a part of stock, see Upholstering Establishments if labor is done; if not charge for these substances by the scale for hay in Feed Stores.			
339½	***Feed** Mills............................	60%	160%	D 2
	1. Add'l labor, power, heat, etc. (C. 4½)			
340*a*	**Feed** Stores (no hay or straw)...........	5%	10%	D 3
340*b*	**Feed** Stores (not over 50 bales hay or straw)	10%	20%	D 3
340*c*	**Feed** Stores (not over 100 bales hay or straw)	20%	40%	D 3
340*d**	**Feed** Stores (not over 1 carload hay or straw	40%	80%	D 3
	(If over 1 carload see Hay Barns.)			

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		1	2	3
	1. If power cleaning, with feed store risks, not over 2 machines	25%		
	2. If power chopping or grinding, not over 2 machines, with feed store risks.	30%		
	If over 2 machines under either of above items, rate as Feed Mill.			
	3. Power with items 340*a*, *b* or *c* (C. 3½), with item 340*d* (C. 4).			
341	**Felt** Stock (see Cloths).			
342	**Filters,** Stocks of, with setting up only	3%	5%	D 1
343	**Fire** Arms, Stocks of	5%	10%	D 3
	If with Sporting Goods, see Sporting Goods.			
344	**Fire** Crackers (Chinese) in original packages	20%	40%	D 3
345	**Fire** Engine Houses, no stabling			D 2
	1. Stabling	10%		
	2. *a*. Lock-up with iron cells	20%		
	2. *b*. If wooden cells, increase 2 *a*	50%		
346	***Fire** Works stocks in original packages	60%	160%	D 4
347	***Fire** Works, open stocks	80%	320%	D 4
	1. Labor, packing (C. 5)			
348	**Fish** Stocks (cured)	3%	5%	D 1
349	**Fish** and Oyster Stocks (fresh)	3%	5%	D 4
350	**Fixtures** (gas and electric) Stocks of. See Gas and Electric Fixtures.			
351	**Fixtures,** Store and Bank.			
	Charge building rate when insured with building. Charge stock rate when insured with stock, or specific.			
352	**Flags** and Banner Stocks (see Decorating Stocks).			
353	**Flats** (see Dwellings).			
354	**Flavoring** Extract Manf. Cold Process	10%	10%	D 3
	1. Additional labor (C. 2)			
	2. Power (C. 2)			
355	**Flavoring** Extract, Manf. Cold Process with Dry Yeast making	15%	20%	D 3
	1. Additional labor (C. 3)			
	2. Power (C. 3)			
356	**Flavoring** Extract, Stocks	5%	10%	D 3
357	**Florists'** Stocks	3%	5%	
	If policy includes plants and flowers.			D 4
	If policy excludes plants and flowers.			D 3
358	**Flour** Storage.			
	a. In packages, no mixing or sifting		5%	D 2
	1. Add for not over 2 power machines for mixing or sifting	25%		
	2. Power (C. 3½)			
	b. With mixing and (or) sifting with over 2 power machines	25%	40%	D 2
	1. Add'l labor, power, heat, etc. (C. 3½)			
359	**Flowers,** artificial (see Feathers and Flowers).			
360	**Food** Stocks	5%	10%	D 3
360½	**Freight** Houses of Transportation Lines, Terminal, (to be applied only on specific property of consignors or consignees while in freight depots or warehouses)	20%	30%	
	The following are cumulative with regular structural charges:			
	1. If platform rests on piles and space beneath is not enclosed with spark proof wire netting or other approved inclosure	10%		

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		1	2	3
	2. If wood floor not filled in with earth or cinders to floor line........	10%		
	(Reduce charge one-half when so filled. Omit credit *m*, page 61).			
	3. If heated by stoves outside of office.	10%		
	4. If lighted by kerosene lamps outside of office	10%		
	5. If gasoline torches or lamps.........	50%		
	6. If locomotives permitted in building..	25%		
	7. If no signs prohibiting smoking outside of office.........................	5%		
	8. If tugs or steamers moored to dock when not in use.................	30%		
	NOTE: Contents take regular differential according to the classified damageability of the property insured.			
361	**Fringe** and Trimming Stocks.............	5%	10%	D 3
362	**Fringe** and Trimming Factories (see Sewing Risks).			
363	**Fruit** Stores (retail)....................	3%	5%	D 2
364	**Fruit** Stores (wholesale)................	10%	20%	D 3
	1. Banana ripening	20%		
	If steam or hot water heat, no charge.			
364B	**Fruits** (dried), storage..................		10%	D 2
364C	**Fruits** (dried), Stocks of, with renovating, etc.	5%	10%	D 2
	1. Labor, heat, etc. (C. 2)			
364D	**Furnace** Stocks	3%	5%	D 2
	1. Labor, Power, Heat, etc. (C. 1)			
	If over 2 hands, see Machine Shops.			
365	**Furnished** Rooms (see Lodgings).			
366	**Furnishing** Goods (Men's)...............	5%	10%	D 2
367	**Furniture**, household, stored see Household Furniture (stored).			
368	**Furniture** Stocks	10%	20%	D 2
	When premises are crowded with goods, crated or wrapped with paper, excelsior, etc., charges may be increased at discretion of raters to.....	20%	40%	D 2
	1. Add for repairs on small scale.......	10%		
	2. Add for upholstering on small scale..	10%		
	3. Add for varnishing on small scale..	10%		
	If regular woodwork, see 948.			
369	**Furniture** Stocks (second-hand)..........	20%	40%	D 3
	1. Add for repairs, upholstering, etc. (See Furniture Stocks).			
370	**Furs**, wholesale, in packages..............	3%	5%	D 2
371	**Furs**, retail............................	3%	5%	D 3
	(Fancy City Stocks, class as D. 4).			
372	**Fur** Sewing Risks.			
	Coarse Furs	10%	10%	D 2
	Fine furs, seal, sable, otter, mink, ermine, etc...........................	10%	10%	D 4
	1. Additional labor (C. 2)			
	2. Power, Heat, etc. (C. 2)			
378	†**Gambling** Rooms, no kitchen..............	10%		D 4
	1. Add for cooking.....................	20%		
379	**Gas** and Electric Fixtures, Stocks of......	3%	5%	D 3
	1. Labor (C. 1)			
	2. Power, furnaces or dry room (C. 1).			
	3. If lacquering or plating.............	30%		
380	**General** Merchandise, Stocks............	5%	10%	D 2
	(Not Department Stores).			
381	**General** Storage Warehouses.			
	Should rate by restrictions in policy form, or special contract with warehouseman.			
	If not as above.......................	20%	80%	D 3

		1	2	3
382	**Gents'** Furnishing Goods (see Furnishing Goods).			
383	**Glass.** Plate, Stained, Ornamental and Window	5%	10%	D 3
	1. Labor, polishing, grinding or silvering (C. 2)			
	2. Labor, packing (C. 3)			
	3. If no bins for packing materials	10%		
384	**Glass** Ware and Window Glass (storage).		10%	D 3
385	**Glass** Ware (see Queensware).			
386	**Glaziers** (see Painters and Glaziers).			
387	**Glove** Stocks.			
	a. High grade, kid, etc	3%	5%	D 3
	b. Leather, cloth, etc	3%	5%	D 2
	If manufacturing, see Leather Sewing if Kid, or Leather and Sewing Risks if Cloth.			
388	**Glucose** in Barrels	3%	5%	D 1
389	**Glue** Storage		5%	D 1
390	**Gold** Beaters	5%	5%	D 3
	1. Additional labor (C. 1)			
391	**Granite** Ware	3%	5%	D 1
392	**Grease** Risks, general, not including large manufacturing establishments or Butcher Shops	25%	40%	D 2
	1. If melting and (or) mixing by steam	30%		
	2. If melting and (or) mixing by furnace kettles	60%		
	3. Additional labor (C. 3½)			
	4. Power, furnaces, kettles, etc. (C. 3½)			
393	**Green** Grocers (see Markets, Vegetable).			
394	**Greenhouses** (see Florists).			
395	**Groceries** (ordinary retail)	5%	10%	D 2
396	**Groceries** (retail) fancy goods, delicacies, condiments, etc.	5%	10%	D 3
397	**Groceries** (wholesale)	10%	20%	D 2
	1. For each 200 cases of matches in excess of 200 Add	5%		
	If manufacturing of flavoring extracts, baking powder, etc., hazard should be analyzed and charges applied for materials, labor, furnaces, etc., as directed in appendix.			
	If coffee or spice roasting, see Coffee Roasting.			
	If cigars and tobacco insured specifically, class as D. 4. If blanketed with general stock, class entire stock as D 3.			
398	**Groceries** (wholesale).			
	When entirely free from manufacturing or industrial processes, with limited supply of wooden, basket and willow ware, brooms, matches, oils, fixed ammunition, etc., and no explosives, may, at discretion of rater, be rated as ordinary retail groceries.			
399	**Groceries** (heavy), as sugar, salt, molasses, canned goods, etc	3%	5%	D 2
	(No wooden or willow ware, brooms, oils, matches, cigars, or other inflammables, and free from industrial processes.)			
400	**Gun** and Locksmiths	10%		D 2
	1. Additional labor (C. 2)			
	2. Furnaces, power, etc. (C. 2)			
401	**Gymnasiums**	5%		D 2

		1	2	3
411	**Haberdashers'.** See Furnishing Goods, Men's.			
411½	**Hair-dressing** Parlors			D 3
412	**Hair** Goods (human and artificial)	3%	5%	D 3
	1. Labor (C. 1)			
413	**Halls** (Society), Lodge or Club Rooms, (no cooking), including private Dance Halls	3%		D 2
	1. Add for cooking	10%		
	If more than one hall in building, maximum cooking charge not to exceed 20%.			
414	**Halls** (Public or Labor Union), with or without boxed platform stage, no scenery	10%		D 2
	1. Add for cooking	10%		
	2. Heated by hot air furnace or stoves	5%		
	(This charge applies only when building has no other occupancies.)			
	3. If boxed platform stage with small amount of fixed scenery, or not over 3 shifts of sliding scenery	20%		
	4. Same as No. 3, lighted by gas on stage or in dressing rooms	5%		
	5. Same as No. 3, with gas footlights	5%		
	6. Same as No. 3, lighted by other than electric or gas on stage or in dressing rooms	10%		
	7. Same as No. 3, with other than electric or gas footlights	15%		
	8. Add for dressing rooms	15%		
415	**Halls** (public), with enclosed platform stage and sliding scenery (over three shifts)	60%	20%	D 3
	1. Heated by hot air furnace or stoves	10%		
	2. Lighted by gas on stage or in dressing rooms	10%		
	3. Gas footlights	10%		
	4. Lighted by other than electricity or gas on stage or in dressing rooms	20%		
	5. Lighted by other than electric or gas footlights	30%		
	6. Add for dressing rooms	15%		

NOTE: Halls with both *lifting* as well as *sliding* scenery, or stage with egress and ingress, dressing rooms, etc., beneath, should be classed as Theatres or Opera Houses, and in rating such risks all the above percentages in column 1 should be increased one-half for lifting scenery or doubled for both lifting scenery and stage as described.

When building contains a superstructure above proscenium for scene shifting, if with brick walls, count it as an additional story for entire building, both as to basis rate and area charge, and if frame or iron-clad increase area charge 10 points in addition to above.

*If classed as Theatre or Opera House and contents should class as D. 4.

In rating Theatres in towns of over 10,000 population consult Special Theatre Schedule.

		1	2	3
416	**Hammock** and Net-weaving	10%	10%	D 2
	1. Additional labor (C. 2)			
	2. If pitching by approved steam heat.	20%		
	3. If pitching by furnace or kettles (C. 3½).			
417	**Hardware** Stocks (general), no tin work, paints or oils	5%	10%	D 2
	1. Add for paints and oils...........	10%		
	(No charge for dry paints or paints in cans)			
	2. Labor (tin work) (C. 1) No charge for 2 hands.			
	3. Furnace (C. 1)			
418	**Hardware** Stocks (heavy), no cutlery, shelf or wooden goods................	3%	5%	D 1
	(If paints and oils, see 417.)			
419	**Hardware** Stocks (heavy), same as 418 with wagon materials	5%	10%	D 2
	(If paints and oils see 417.)			
420	**Harness** and Saddlery Stocks (under 5 hands, no collar stuffing).......	3%	5%	D 2
	(If over 5 hands, rate as Leather Sewing Risk and (or) Collar Factory.)			
421*a*	**Hat** and Cap Stocks (retail).............	5%	10%	D 2
421*b*	**Hat** and Cap Stocks (wholesale) excluding straw	3%	5%	D 1
421*c*	**Hat** and Cap Stocks (wholesale) including straw	5%	10%	D 2
421*d*	**Hat** and Cap Stocks (wholesale) straw only	10%	20%	D 3
422	**Hat** Factories, felt, cloth and silk........	15%	20%	D 2
	1. Additional labor (C. 3)			
	2. Power, furnaces, dry rooms, etc. (C. 3)			
	3. Pouncing (no blowers)	20%		
	4. Singeing	20%		
423	**Hat** Factories (straw)	25%	40%	D 3
	1. Additional labor (C. 3½)			
	2. Power, furnaces, dry rooms, etc. (C. 3½)			
424	**Hat** Cleaning Shops	15%		D 3
	1. Additional labor (C. 3)			
	2. Furnaces, dry rooms, etc. (C. 3)			
	3. If gasoline used	20%		
	4. If not over 10 gals. kept on premises in approved metal can.......	20%		
	5. If gasoline stored, not over 1 bbl....	50%		
425	**Hay** and Feed Stocks (see Feed Stores).			
426	***Hay** Barns	20%	160%	D 3
	1. Labor (C. 4½)			
	2. Power (C. 4½)			
427	**Hektographs,** Stocks of	3%	5%	D 3
427b	*†**Hemp** in mercantile buildings (unhackled) not over 100 bales....................	20%	80%	D 3
427c	*†**Hemp** warehouse (unhackled)...........	20%	160%	D 3
427d	†**Hemp** in mercantile building (hackled) not over 100 bales.......................	10%	40%	D 2
427e	*†**Hemp** warehouses (hackled)...........	20%	80%	D 2
428	**Hides** and Skins, green and dry (no grease), Storage....................		5%	D 1
429	**Hides** and Skins, green and dry (with grease), Storage		10%	D 1
430	**High** Wines, see Liquor Stores			
431	**Hooks** and Eyes, manufacturing	10%	10%	D 2
	1. Additional labor (C. 2)			
	2. Power, furnaces, etc. (C. 2)			

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		1	2	3
432	**Hops** in Bales (storage)		20%	D 3
433	**Horse** Collars, manufacturing (see Harness)			
434	**Hosiery** and Underwear Stocks	5%	10%	D 2
435	**Hospitals,** private, for non-contagious diseases (see Sanitariums).			
436	**Hotels** (family), lodgings only	30%	10%	D 2
	1. Add for restaurant	20%		
	2. Add for laundry (steam)	20%		
	If restaurant, laundry or heating plant in separate building, see remarks under Hotels (transient)			
437	**Hotels** (transient), lodgings only	50%	20%	D 2
	1. Add for cooking	30%		
	2. Add for laundry (steam)	30%		
	No charge for bar or barber shop if connected with hotel.			
	When cooking or laundry are in building separated by standard fire door or space from hotel, charges may be reduced according to the exposure from out building.			
	When furnace for lighting, heating or power is similarly located apply credit j in Table of Credits.			
438	**House** Furnishing Stocks	5%	10%	D 2
439	**Household** Goods, stored in mercantile buildings, (contents of not over one household)			D 4
439½	†**Household** Goods, stored in mercantile buildings (contents of not over 3 households)	20%	40%	D 4
	If over 3 lots see Household Furniture Warehouses.			
440	**Household** Furniture Warehouses for stored household goods temporarily not in use	20%	80%	D 4
450	**Ice** Cream Parlors	5%		D 2
451	**Ice** Cream Factories	5%	5%	D 3
	1. Additional labor (C. 1)			
	2. Power, etc. (C. 1)			
452	**Ice** Factories	5%	5%	
	1. Power (C. 1)			
	2. Additional Labor (C. 1)			
	Machinery class as			D 2
	Materials and product class as			D 3
	If cold storage, rate as Cold Storage Warehouse.			
453	**India** Rubber Goods (heavy)	3%	5%	D 1
454	**India** Rubber Goods, Retail Stocks	3%	5%	D 1
455	**India** Rubber Goods, with Oiled Clothing	5%	10%	D 2
456	**India** Rubber Hose, Belting, etc. (see Belting).			
457	**Ink,** Printing, Stocks	5%	10%	D 2
458	**Ink** (writing) Stocks	3%	5%	D 2
459	**Ink** (printing) Manufacturing	25%	40%	D 3
	(No oil boiling).			
	1. Additional labor (C. 3½)			
	2. Power, furnaces, etc. (C. 3½)			
	(*If oil boiling)	40%	80%	D 3
	1. Additional labor (C. 4)			
	2. Power, furnaces, etc. (C. 4)			
460	**Ink** (writing) Manufacturing	15%	20%	D 2
	1. Additional labor (C. 3)			
	2. Furnaces, kettles, etc. (C. 3)			

		1	2	3
461	**Instruments,** Surgical, Optical, Mathematical, etc.	3%	5%	D 4
462	**Instruments,** Manufacturing (Optical, Surgical, etc), should be rated by analysis and application of charges in Appendix.			
463	**Iron,** heavy (stored)		5%	D 1
470	**Jails** or Lockups, with iron cells	20%		D 1
	1. If wooden cells add	50%		
	2. Stabling Add	10%		
471	**Japanese** Stores (see Chinese Stores)			
472	**Jewelry** Case Manufacturing	15%	20%	D 3
	1. Additional labor (C. 3)			
	2. Power, furnaces, etc. (C. 3)			
473	**Jewelry** Manufacturing	5%	5%	D 3
	1. Additional labor (C. 1)			
	2. Power, furnaces, etc. (C. 1)			
474	**Jewelry** Stocks	3%	5%	D 3
	No charge for repairs, two or three hands.			
475	†**Junk** (metal)	100%	5%	D 4
476	**Justice** of Peace, court room	5%		D 2
486	**Kerosene** U. S. Standard (see Oils)			
487	**Kid** Glove Stocks (see Gloves).			
488	**Knit** Goods (see Hosiery)			
489	**Knitting** Works.			
	Woolens	15%	20%	D 2
	Silks	15%	20%	D 3
	1. Additional labor (C. 3)			
	2. Power, Heat, etc. (C. 3)			
	Cotton, linens, etc.	25%	40%	D 3
	1. Additional labor (C. 3½)			
	2. Power, Heat, etc. (C. 3½)			
	Where two or more materials are used, all charges should grade by that of highest combustibility.			
499	**Laboratories** (see Chemists' Laboratories).			
500	**Lace** and Embroidery Stocks	5%	10%	D 3
500½	**Ladies'** Waists and Dresses	5%	10%	D 3
501	**Lamp** Shades, paper and fabrics	5%	10%	D 4
502	**Lamp,** Stocks (ordinary)	3%	5%	D 3
503	**Lamp,** high-grade art stocks	3%	5%	D 4
504	**Lamp** Wick Stocks	5%	10%	D 1
505	†**Laundries** (hand)	30%	10%	D 2
	1. Additional labor (C. 2)			
506	†**Laundries** (steam)	50%	10%	D 2
	1. Additional labor (C. 2)			
	2. Dry room, according to arrangement, see Appendix.			
	3. Add for gasoline cleaning	20%		
	4. Add for gasoline stored in building, not over 1 bbl	50%		
	5. If not over 10 gals. in metal can	20%		
	6. Power (C. 2)			
	If goods in trust are insured, class as D. 3			

	1	2	3
Laundry Offices (no laundering)........	5%	10%	D 2
Laundry Supply Stocks	5%	10%	D 2
Lead Pipe and Sheet Lead (stored)......		5%	D 1
Leather Stocks			
a. Rough, heavy and sole............	3%	5%	D 1
b. Harness, grain, split and calf, including findings	3%	5%	D 2
c. Fancy, morocco, sheep, goat, kid shagreen and patent, including findings	3%	5%	D 3
Leather Sewing and Cutting, embracing all risks where leather is sewed, cut or cemented (excepting cobblers, harness shops and collar factories)...........	10%	10%	
NOTE: Class rough, heavy and sole as (D. 1):			
Harness, grain, split, and calf including findings as (D. 2):			
Morocco sheep, goat, kid, patent and fancy including findings as (D. 3)			
1. Additional Labor, power, heat, etc. (C. 2)			
NOTE: Sole or heel drying in metal or wooden boxes charge as for dry heat boxes page 22 Appendix.			
2. Harness Oiling....................	5%		
3. Harness Dipping...................	15%		
4. Combustible cement that *does not require heating,* used under regular printing permit limited to one day's supply..............	20%		
5. Combustible cement that *requires heating* used under regular printed permit limited to one day's supply. (Not cumulative with charge 4)	100%		
6. Inking, dyeing, or blacking with benzine, or other combustible used for thinning, limited to one day's supply, charge as follows:			
a. Dyeing or Inking only......... (Charge "a" may be waived for dyeing of edges only)	50%		
b. Dyeing or Inking and (or) drying unless done in a separate and detached building or fire-proof room	100%		
7. Wax Cups heated by flame or Kit lamps not kept in metal boxes.....	10%		
8. Heel or edge machines or other buffing or sanding machines with metal blower with outside exhaust.	10%		
9. If without blowers with outside exhaust .... (Increase charge one-fifth for each machine over 3 up to double the charge).	50%		
10. Wooden heel making...............	10%		
11. Wooden last making (not over 5 hands .... If over 5 hands charge for additional hands engaged in woodwork on scale of (C. 3½) (Not cumulative with charge 10)	25%		
12. No approved metal waste cans for scrapings from cutting board.....	50%		
13. If more than one day's supply of rubber or other cement, dye or volatile fluid combustibles kept in building charge as follows:			
a. Not over 10 gals. in approved metal cans.....................	20%		
b. Not over one barrel............	50%		

		1	2	3
	14. Collar making on small scale in Harness Factories, not over one day's supply of stuffing material in building	50%		
	If stuffing material over one day's supply, or over 5 stuffers, rate as Collar Factory.			
512	**Libraries** in mercantile buildings (private)			D 3
513	**Libraries** (circulating or public) in mercantile building	3%	5%	D 3
514	†**Lime** (storage)		80%	D 3
515	**Linens** (Stocks of)	5%	10%	D 2
516	**Linotyping** machines in use class as			D 3
517	**Liquors**, retail (see Saloons).			
518	**Liquors**, wholesale (no rectifying)	5%	10%	D 2
	1. Labor, rectifying (cold process) or bottling (C. 2)			
	2. Power, heat, etc. (C. 2)			
519	**Liquor** and Cigar Stocks	5%	10%	D 3
520	**Lithographing** Establishments (see Printing).			
521	**Lithographers'** Supplies (Stocks) including stones, ink, machinery, etc	3%	5%	D 2
522	**Livery** Stables (see Stables)			
523	**Locksmiths** (see Gun and Locksmiths)			
524	**Lodge** Rooms (see Halls, Society).			
525	**Lodging** Houses, no restaurant or laundry.			
	1. Under 10 rooms	10%		D 2
	2. Under 20 rooms	20%		D 2
	3. If 20 rooms or over, see Family Hotels.			
	(No charge for sleeping rooms of ground floor occupants or their clerks.)			
526	†**Lodging** Houses (low-grade bed houses)	100%	10%	D 2
534	**Macaroni** Stocks	3%	5%	D 3
535	**Macaroni** Manufacturing	10%	10%	D 3
	1. Additional labor (C. 2)			
	2. Power, furnaces, dry rooms, etc. (C. 2)			
536	**Machine Shops**			
	a. †Dry stamping or turning, drilling and boring, with soap solution in lieu of oil, no woodworking (C. 2)	20%	10%	D 2
	b. †Turning, drilling, boring, etc., with oils, no woodworking (C. 3)	30%	20%	D 2
	1. Additional labor, power, heat, etc., with *a* (C. 2), with *b* (C. 3)			
	2. Forging, if any, see page 21, Appendix.			
	3. Painting, occasional	10%		
	4. Painting (regular) and (or) dipping.	30%		
	5. Dip Tank, with cover	10%		
	6. Dip Tank, without cover	20%		
	(Increase charges 5 or 6 one-fifth for each additional tank, up to double the charge.)			
	NOTE: If dipping in naphtha or other volatile inflammables, or their compounds, double charges 5 or 6.			
	7. Metal buffing or polishing, with approved metal blower system outside exhaust	10%		
	(No charge for one small wheel for occasional use.)			
	8. Same as 7, without approved metal blower system	50%		
	Increase one-fifth for each machine over three up to double the charge.			
	(No charge for one small wheel for occasional use.)			

		1	2	3
	9. Emery grinding, with approved blower system in room without power woodwork, buffing, painting or dipping...	5%		
	Double the charge if without approved metal blower system.			
	(No charge for one or two small wheels.)			
	10. Same as 9 in rooms with power woodwork, buffing, painting or dipping..	30%		
	Double the charge if without approved metal blower system.			
	(No charge for one or two small wheels.)			
	11. If woodworking, see 948 and 949.			
538	**Machinery** Stocks (heavy)...............	3%	5%	D 1
539	**Machinery** Stocks (light)...............	3%	5%	D 2
539½	**Manicuring** Parlors			D 2
540	**Mantels** (wood) Stocks of..............	5%	10%	D 2
541	**Mantels** (metal) Stocks of................	3%	5%	D 2
542	**Mantels**, for incandescent lamps..........	3%	5%	D 4
543	†**Mantel** Factories (for incandescent lamps)	100%	40%	D 4
	1. Additional labor (C. 3½)			
	2. Power, furnaces, dry rooms, etc. (C. 3½)			
544	**Manual** Training Schools (see Academies)			
545	**Map** mounting.			
	a. Without varnishing (C. 3)............	15%	20%	D 4
	b. With varnishing (C. 3½)............	25%	40%	D 4
	1. Add'l labor, heat, etc., according to above combustibility.			
546	**Marble** Stocks..........................	3%	5%	D 3
	(High-grade Carvings, see Statuary).			
547	**Marble** Shops (hand)....................	5%	5%	D 3
	If high-grade carvings................			D 4
	1. Additional labor (C. 1)			
	2. Power (C. 1)			
547½	†**Markets**, Public	30%	10%	D 3
548	**Markets** (vegetable)	3%	5%	D 3
549	**Masquerade** Costumes (see Costumers).			
550	**Massage** Parlors			D 2
	1. Power (C. 1)			
	2. If baths, see Barber Shops.			
551	* **Matches** in original packages.............	40%	80%	D 4
552	* **Mattress** Material, Stocks, with tow, shoddy, moss, excelsior, etc............	40%	80%	D 3
	If small quantities of tow, shoddy, moss, excelsior, etc., see scale for hay with Feed Stores.			
553	*†**Mattress** Factories (upholstering).......	100%	80%	D 3
	1. Additional labor (C. 4)			
	2. Picker, hand	50%		
	3. Picker, power	100%		
	(Charges 2 and 3 for picker may be reduced one-half if in a metal lined room with steam jet.)			
	4. Power (C. 4)			
554	**Mattress** Factories (wire) metal work only	5%	5%	D 2
	1. Additional labor (C. 1)			
	2. Power (C. 1)			
555	**Mattress** Factories (wire), if woodwork	25%	40%	D 2
	1. Additional labor (C. 3½)			
	2. Power (C. 3½)			
555½	**Meat** Markets (see Butcher Shops).			
556	**Meats**, Fresh, Stored—not in cold storage warehouse		5%	D 3
557	**Meats** (cured) in bulk, stored...........		5%	D 2
558	**Meats** (pickled in barrels) stored........		5%	D 1
559	**Merchandise** mixed warehouses, see General Storage Warehouses			
560	**Merchant** Tailors (under 10 hands)......	3%	5%	D 2
	If over 10 hands see Sewing Risks.			
561	**Merchant** Tailor Stocks, with making (see ***Tailors).***			

		1	2	3
562	**Military** Stocks, no manufacturing	5%	10%	D 3
563	**Milk** Depots	3%	5%	D 3
564	**Mill** Supplies	5%	10%	D 2
	1. Add for oils, if any	10%		
565	**Millinery** Parlors and small stocks (Not over two or three trimmers.)	5%	10%	D 4
566	†**Millinery** Stocks, retail (not over 10 trimmers)	10%	20%	D 4
	1. Additional labor (C. 1)			
	2. Power (C. 3)			
567	†**Millinery** Stocks, wholesale (not over 10 trimmers)	10%	20%	D 3
	1. Additional labor (C. 1)			
	2. Power (C. 3)			
568	**Mineral** Wool (see Asbestos)			
569	**Mineral** Water stocks	3%	5%	D 1
570	**Mineral** Water Factory. See Soda Water Factories.			
571	**Mirrors,** stocks	3%	5%	D 3
572	**Model** Makers (metal), see Machine Shops			
572½	**Modistes,** see Dressmakers.			
573	**Molasses** in barrels, storage		5%	D 1
574	**Mouldings;** see Picture Frames.			
574½	**Moving** Picture Theatres	50%	20%	D 4
575	**Mucilage** Factories. See Paste Factories.			
576	**Musical** Instrument Stocks	5%	10%	D 3
577	**Music** Stores (small) no repairs	5%	10%	D 3
578	**Music** Stores (large) general musical merchandise	10%	20%	D 3
	1. Labor (repairing) (C. 3)			
	2. Power, heat, etc. (C. 3)			
579	†**Museums** (dime) no scenery	50%	10%	D 3
	Exhibits grade double			D 4
580*†	**Museums** (dime) with scenery rate as Theatre. See Halls			
	Exhibits grade double			D 4
581	†**Museums,** high grade, art, etc	10%		D 4
590	**Natatoriums**	5%		D 2
591	**Naval** Stores. See Ship Chandlers			
592	**Neckwear.** See Furnishing Goods			
593	**Neckwear** Factories. See Sewing Risks			
594	**Needles,** Stocks of	3%	5%	D 4
595	**Newsdealers'** and Stationers' Stocks (No charge for occupancy of small news stands.)	5%	10%	D 3
596	**Nickel** Plating. See Plating			
597	**Notions** (retail)	10%	20%	D 3
598	**Notions** (wholesale)	5%	10%	D 3
599	**Notions** (paper), manufacturing	25%	40%	D 4
	1. Additional labor (C. 3½)			
	2. Power, Heat, etc. (C. 3½)			
600	**Nuts** (peanuts) without shelling and cleaning	5%	10%	D 2
601	**Nuts** (peanuts) with shelling and (or) cleaning	10%	20%	D 2
	1. Labor (C. 3)			
	2. Power (C. 3)			
609	**Oakum,** on storage.			
	a. Ship's Oakum.			
	1. Not over 20 bales	10%	20%	D 3
	2. Not over 100 bales	20%	40%	D 3
	3.*Over 100 bales	20%	80%	D 3
	b. Plumber's Oakum.			
	1.*Not over 100 bales	20%	80%	D 3
	2.*Over 100 bales	20%	160%	D 3
	(When stored in same premises with a mercantile stock, the above classification should be used for entire contents when higher than that of the stock itself).			

		1	2	3
610	**Office** Occupancies, business and professional men, insurance, railroads, etc...			D 2
611	**Oils,** Essential (stocks)................	5%	10%	D 3
612*	**Oils,** including vegetable, animal and fish oils, lard, tallow and other non-volatile, no processes	20%	40%	D 2
613*	**Oils,** general stocks of, not including any of the products of petroleum except Government Standard kerosene..........	40%	80%	D 2
	1. Mixing by steam..................	30%		
	2. Mixing by furnace kettles.........	60%		
	3. Furnaces, kettles, etc., (C. 4)			
614*	**Oils,** Kerosene, Government Standard..	40%	80%	D 2
615*	**Oils,** including crude petroleum and its lighter products, as gasoline, naphtha, benzine, etc......................	80%	320%	D 2
616	**Oils** and Paints. See Paints and Oils			
617	**Oil** Paintings, on sale or exhibition......			D 4
618	**Oil** Cloths, stocks, including linoleum.	5%	10%	D 1
619	**Opera** Houses. (See Halls)			
620	**Optical** Instruments. (See Instruments)			
621	**Opticians**	3%		D 3
622	**Oriental** Rug Stocks, Turkish, Persian, Japanese, etc......................	3%	5%	D 3
623	**Overall** Factories. See Sewing Risks			
624	**Over** Gaiters, manufacturing. See Sewing Risks			

634	**Paintings,** oil. See Oil Paintings			
635	**Paints,** dry colors or small unbroken package stocks......................	5%	10%	D 2
	(If wall paper, class stock as D 4.)			
636	**Paint** and Oil stores, small open retail stocks	10%	20%	D 2
	(If wall paper, class stock as D 4)			
	1. If mixing by hand or painting on premises	30%		
638*	**Paints,** Oils and Varnish, large stocks.....	20%	40%	D 2
	1. If oil drawing....................	30%		
	2. If mixing on premises by hand....	30%		
	3. If mixing by power..............	60%		
	4. Labor (C. 3½)			
	5. Power and Heat (C. 3½)			
	6. If grinding, see Paint Mills			
	7. If open lights or fire heat in stock rooms	100%		
	8. If swinging electric lights not protected by wire guards............	50%		
	(Charges 7 and 8 are not cumulative.)			
639*†	**Paint** and Color Works (no naphtha used).	100%	80%	D 2
	1. Additional labor (C. 4)			
	2. Power, Furnaces (C. 4)			
	(See charges 7 and 8, No. 638.)			
640*†	**Paint** and Color Works..................	100%	160%	D 2
	Naphtha used, limited to one day's supply.			
	1. Additional labor (C. 4½)			
	2. Power, Furnaces, etc. (C. 4½)			
	(See charges 7 and 8, No. 638.)			

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641*†	**Paint** and Color Works. With naphtha not limited to one day's supply.	100%	320%	D 2
	1. Additional labor (C. 5)			
	2. Power, Furnaces, etc. (C. 5) (See charges 7 and 8, No. 638.)			
642	**Paint** Shops	25%	40%	D 2
	1. If painting on premises	30%		
	2. Additional labor (C. 3½)			
643	**Paper** Warehouses, heavy, flat, news, wrapping and strawboard		5%	D 2
644	**Paper** Warehouses, miscellaneous and light		10%	D 3
645	**Paper,** wholesale, general stocks	5%	10%	D 3
	If ruling, cutting or other processes,			
	1. Labor, (C. 2)			
	2. Power (C. 2)			
646	**Paper** stock (cuttings) baled, no sorting	10%	20%	D 3
647	**Paper** Stock (cuttings) with sorting and baling	20%	40%	D 3
	1. Labor (C. 3½)			
	2. Power (C. 3½)			
648	**Paper** Bags (storage)		10%	D 3
649	**Paper** Box Factories, see Box Factories (paper)			
650	**Paper** Carpet Linings, see Carpet Linings.			
651	**Paper** Envelope Stocks	5%	10%	D 3
652	**Paper** Labels and Lithographs	5%	10%	D 4
652½	**Paper** Pattern Manufacturing, see Notions (Paper) manf.			
653	**Paper** Pattern Stocks (retail)	5%	10%	D 4
654	**Paper** Pattern Stocks (wholesale)	10%	20%	D 4
655	**Paper** (wall paper), Stocks	5%	10%	D 4
	If paints (see Paint and Oil Stores).			
656	**Papier** Mache and Wax Work, manufacturing	25%	40%	D 4
	1. Additional labor (C. 3½)			
	2. Power and heat (C. 3½)			
657	**Paste** Manufacturing	10%	10%	D 3
	1. Additional labor (C. 2)			
	2. Power and furnaces (C. 2)			
658	**Patent** Medicine Stocks.			
	If non-inflammable ingredients	5%	10%	D 3
	If ointments or inflammable ingredients	10%	20%	D 3
659	**Patent** Medicine Factories, cold process, non-inflammable ingredients	15%	20%	D 3
	1. Additional labor (C. 3)			
	2. Power and heat (C. 3)			
660*†	**Patent** Medicine Factories, with inflammable ingredients, should be rated by special analysis.			
660½	**Patterns** in use			D 4
661	**Pawnbrokers,** jewelry only	3%	5%	D 3
661½	**Pawnbrokers,** general, including second hand clothing	10%	20%	D 3
662	**Peanut** Roasting. See Coffee Roasting. If shelling or cleaning. See Nuts.			
663	**Pencils,** lead, Stocks of	5%	10%	D 2
663½	**Penny** Arcades	10%		D 4
664	**Perfumery** Stocks	3%	5%	D 3
665	**Perfumery** Manufacturing (cold process)	15%	20%	D 3
	1. Additional labor (C. 3)			
	2. Power and Heat (C. 3.)			

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666	**Pharmaceutical** Laboratories. See Chemical Laboratories.			
667	**Phonograph** Stocks, including Talking Machines	3%	5%	D 4
668	**Photograph** Galleries	5%	10%	D 4
669	†**Photographers,** using celluloid in building	20%	40%	D 4
670	†**Photo-engraving** Establishments, process work	15%	20%	D 4
	1. Additional labor (C. 3)			
	2. Add for wet plate work	30%		
	If woodwork, see 948 and 949.			
671	**Photographs** (enlarging by electric light)	10%	20%	D 4
672	†**Photo-gravure** Establishments, with printing	25%	40%	D 4
	1. Additional labor (C. 3½)			
673	**Photographers'** Supply Stocks. No acids or chemicals kept outside of safe or vault	5%	10%	D 4
673½	**Photographers'** Supply Stocks. Acids or chemicals not kept in safe or vault	10%	20%	D 4
674	**Piano** Stocks	5%	10%	D 3
	1. Labor, repairs (C. 3)			
674½	**Pickles,** Catsups, Kraut, etc., **Stocks**	5%	10%	D 3
675	**Pickles,** with bottling only	10%	10%	D 3
	1. Additional labor (C. 2)			
676	†**Pickle** Factories (pickling in brine and barreling only)	20%	5%	D 3
677	†**Pickle** and Preserve Factories, output packed in glass and boxed on premises	25%	40%	D 3
	1. Additional labor (C. 3½)			
	2. Power, Furnaces, etc. (C. 3½)			
678	**Picture** Frame Stores	10%	20%	D 3
	1. Labor (framing) (C. 3)			
679	†**Picture** Frame Factories, finishing, joining, painting, dipping, whitening and gilding only	25%	40%	D 3
	1. Add'l labor, power, heat, etc. (C. 3½)			
	2. If dip tanks, or woodwork, see 948 and 949.			
680	**Picture** Mouldings, **Storage**		40%	D 3
682	**Pitch,** Tar, etc. (See Roofing Materials)			
683	**Plaster** Images, Stocks	3%	5%	D 4
684	**Plaster** Images, Manufacturing	10%	10%	D 4
	1. Additional labor, heat, etc. (C. 2)			
	2. Painting	30%		
685	**Plated** Ware, Stocks	3%	5%	D 2
	If manufacturing			
	1. Labor (C. 1)			
	2. Power (C. 1)			
	3. If electro-plating	20%		
686	**Plumbers'** and Steam Fitters' Supplies, Stocks	3%	5%	D 1
687	**Plumbers'** Shops	5%	5%	D 1
	1. Additional labor (C. 1)			
	2. Furnaces (C. 1)			
687½	**Police** Stations. (See Jails)			
688	**Post** Offices	5%	10%	D 2

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689	†**Poultry** Packing Establishments	50%	20%	D 3
	1. Additional labor (C. 3)			
	2. Furnaces, heat, etc. (C. 3)			
	3. For candling by artificial other than electric light in metal-lined room add	10%		
	4. For candling by artificial other than electric light in the open	30%		
690	**Preserving** Establishments (see Pickle and Preserving Works).			
691	**Printing**, composing only			D 2
	1. Linotype machine	5%		
	(Increase charge one-fifth for each machine over one up to double the charge)			
	2. Power, heat, etc. (C. 1)			
	Furnaces with Linotype machines may be waived.			
	Linotype machines class as (D. 3)			
692	**Printing** (private) with office, mercantile or industrial occupancies, not over 1 press	10%		
	(Increase one-fifth for each press over one, up to double the above charge)			
	1. Power, heat, etc., charge by combustibility of main occupancy.			
	2. Presses take same rate as other contents.			
	(If large cylinder press or over six small presses, rate under 694, charging for power, heat, etc., according to combustibility of main occupancy, with minimum of (C. 3½)			
693	**Printing**, small job, with not over 3 presses, or newspaper establishments	15%	20%	D 3
	1. Add'l labor, power, heat, etc. (C. 3)			
	(Charge for furnace with Linotype machine may be waived)			
	2. Stereotyping	10%		
	3. Electrotyping	10%		
	Linotype machines class as (D 3)			
694	**Printing**, Job, with over 3 presses, or Printing and Book-binding Establishments	25%	40%	D 3
	1. Additional labor, power, heat, etc. (C. 3½)			
	2. Stereotying	10%		
	3. Electrotyping	10%		
	(Furnaces with Linotype machines may be waived.)			
	Class Linotype machines (D 3)			
695	**Printers'** Ink, Manf. (see Ink (printing).			
696	**Printer** Roller, Manf	15%	20%	D 3
	1. Additional labor (C. 3)			
	2. Power, furnaces, kettles, etc. (C. 3)			
697	**Printers'** Supply Stocks	5%	10%	D 3
698	**Provisions** (cured), Stocks of	3%	5%	D 2
699	**Produce** and Provisions (storage)		20%	D 3
699½	**Produce** and Provisions, Stocks	10%	20%	D 3
700	**Produce** and Provisions on cold storage. (See Cold Storage Warehouses.)			
701	**Public** Halls (see Halls).			
702	**Pulleys** (wood), Stocks	5%	10%	D 2
	1. Add for oiling	10%		
703	**Pumps** and Scales (see Scales and Pumps).			
714	**Queensware** and Glassware (no packing)	3%	5%	D 3
	1. Labor (packing) (C. 3)			
	2. No bins for packing materials	10%		

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Racket Stocks	10%	20%	D 3
Radiators (heating), Stocks of	3%	5%	D 1
Rag Carpet Weaving (see Carpet Weaving).			
Rags, Baled (washed) on storage; no assorting	20%	40%	D 4
***Rags,** Baled (unwashed)	40%	80%	D 4
***Rags** (with assorting and baling only) 1. Additional labor (C. 4½) 2. Power (C. 4½)	60%	160%	D 4
***Rags** (with baling, cutting and dusting) 1. Additional labor (C. 5) 2. Power (C. 5)	80%	320%	D 4
Railway Salvage Warehouses	20%	80%	D 3
Railway Supply Stocks (no waste or wooden goods)	3%	5%	D 2
Railway Supply Stocks (general, with waste and wooden goods)	10%	20%	D 2
Rattan and Willowware Stocks	10%	20%	D 3
***Rattan** Goods Factory 1. Additional labor (C. 3½) 2. Power, furnaces, etc. (C. 3½)	25%	40%	D 3
Rectifying Establishments (cold process) 1. Additional labor, heat, etc. (C. 3)	15%	20%	D 2
Refrigerators (ice chests), Stocks of	5%	10%	D 2
Regalias (Stocks of)	5%	10%	D 3
Regalia Manufacturing (see Sewing Risks).			
Restaurants (small)	20%	10%	D 3
Restaurants (large, with or without bar)	30%	10%	D 3
Restaurants (without cooking), or Dairy Lunches	3%	5%	D 3
Roller Polo Rinks (see Skating Rinks).			
Roofing Materials, felt, paper, pitch, etc.	20%	40%	D 2
Rope and Cordage Stocks, heavy (no twine)	3%	5%	D 1
Rubber Goods. (See India Rubber.)			
Rubber and Stamp Manufacturing, including brands and stencils 1. Additional labor (C. 2) 2. Power, furnaces, etc. (C. 2)	10%		D 3
Rugs, Stocks of	3%	5%	D 2

Saddlery and Harness. (See Harness.)			
Safes, Iron, Stocks of 1. Labor (repairing) (C. 1)	3%	5%	D 1
Sail Makers. (See Sewing Risks.)			
Sail and Rigging Lofts If Sewing, see Sewing Risks.		10%	D 2
Saloons (liquor or beer), with or without billiards or bowling, no restaurant	5%	10%	D 2
Saloons, with restaurants (small).	10%	10%	D 2
Saloons, with restaurants (large) see Restaurants.			
Furniture and Fixtures of fancy saloons should class as D. 3.			

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772	**Salt Fish.** (See Fish, cured).			
773	**Saltpeter** Storage		80%	D 3
773½	**Salt** Storage		5%	D 2
774	**Sand-paper,** Stocks of	5%	10%	D 3
774½	**Sanitariums,** private. Not over 15 rooms If 20 rooms or over rate as Family Hotel.	20%		D 2
775	**Sanitariums** (no contagious diseases). See Family Hotels.			
776	**Sash,** Door and Blinds. (See Blinds, Sash and Door).			
777	**Sausage** Making. (See Butcher Shops.)			
778	**Saws,** Stocks of	3%	5%	D 2
779	**Scales** and (or) Pumps, Stocks of	3%	5%	D 2
	1. Labor (repairs) (C. 1)			
	2. Power (C. 1)			
780	**Scenery** Storage	20%	80%	D 4
781	**Schools.** (See Academies).			
782	**School** Supply Stocks	10%	20%	D 2
783	**Second-hand** Stocks. (See Clothing and Furniture, second-hand.)			
784	**Seed** Stores	5%	10%	D 4
785	**Seeds,** Flax, Hemp, Beans and other field seeds (on storage)		10%	D 2
	1. If cleaning by hand, with seed risks, labor (C. 2)			
	2. If cleaning by power, with seed risks, not over two machines	25%		
	a. Power (C. 3½)			
	3. If over two power cleaners	25%	40%	
	a. Additional labor, power, etc. (C. 3½)			
786	**Sewing** Machine Stocks, no repairs	3%	5%	D 3
787	**Sewing** Machine Stocks, with repairs	10%	10%	D 3
	1. Additional labor (C. 2)			
	2. Power, Heat, etc. (C. 2)			
788	**Sewing Risks,** embracing all risks where cutting and (or) sewing is done by hand or sewing machines on textile fabrics, including awnings, tents, flags, bags, tarpaulins, garments, etc., excepting Milliners, Dressmakers and Tailors, which see:			
	a Woolens	10%	10%	D 2
	b Silks	10%	10%	D 3
	c Linens, Cottons, and other vegetable fabrics	15%	20%	D 2
	d Shoddy, Slop-Shop Goods or Cheap Dyed cotton (overalls, etc)	25%	40%	D 2
	NOTE: When two or more kinds of above are used, the graded charges that follow should be made by the grade of highest combustibility.			
	1. Additional Labor should be charged as follows:			
	a Cutting only, classes "a" and "b" (C. 1): class "c" (C. 2): class "d" (C. 3)			
	b Cutting and making classes "a" and "b" (C. 2): class "c" (C. 3): class "d" (C. 3½)			
	2. Power, Heat, etc., classes "a" and "b" (C. 2): class "c" (C. 3): class "d" (C. 3½)			
	3. If Laundering (steam) (This charge in addition to charge under No. 2 for laundry dry room)	20%		

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	4. If Dyeing	20%		
	5. If gasoline cleaning	20%		
	6. Gasoline kept in building, not over 10 gallons in metal cans	20%		
	7. Gasoline kept in building, not over one barrel	50%		
	8. Painting, varnishing, tarring or oiling on premises, not in a separate room with approved cut-off	100%		
	9. Storage of second-hand awnings	100%		
	(If leather sewing, see Leather Sewing Risks.)	.		
9	**Shellac** Varnish Making	15%	20%	D 2
	1. Additional labor (C. 3)			
0	**Sheet** Metal Works (see Machine Shops).			
1	**Ship** Chandler Stocks	10%	20%	D 2
	1. Oils not kept in vaults	10%		
	2. Labor (C. 3)			
	3. Picker, hand	50%		
	4. Picker, power	100%		
	(Charges 3 and 4 may be reduced one-half if in a metal-lined room with steam jet.)			
	5. Power (C. 3)			
2	**Shirts,** Collars and Cuffs, Stocks	5%	10%	D 2
3	**Shirt** Making (see Sewing Risks).			
3½	**Shoemaker** Shops (see Cobblers).			
4	**Shoes** (see Boots and Shoes).			
5	**Shoe** Factories (see Leather Sewing Risks).			
6	**Shooting** Galleries	10%		D 2
7	**Show** Cases, Stocks of	3%	5%	D 3
8	**Show** Case Factories. If woodwork, see 948 and 949. If metal work, see 536.			
9	**Sign** Manufacturing (glass)	10%	10%	D 3
	1. Additional labor (C. 2)			
	2. Power, heat, etc. (C. 2)			
0	**Sign** Manufacturing (metal)	10%	10%	D 2
	1. Additional labor (C. 2)			
	2. Power, heat, etc. (C. 2)			
1	**Sign** Painters (see Paint Shops).			
1½	**Sign** Writers and Designers	15%	20%	D 2
2	**Silk** Goods, open retail stocks	5%	10%	D 3
3	**Silk** Goods, wholesale	5%	10%	D 2
4	**Silverware,** solid	3%	5%	D 2
5	†**Skating** or Roller Polo Rinks	100%		D 2
	(When halls or mercantile buildings are so occupied, above charge may be reduced one-half. Halls rented for occasional skating should be rated as Halls.)			
6	**Slot** Machines (see Automatic Machines).			
7	**Smokers'** Sundries, Stocks of (see Cigars and Smokers' Articles).			
8	**Snuff** Factories (see Tobacco Factories).			
9	**Soap** Stocks	5%	10%	D 1
0	†**Soap** Factories, Toilet, cold processes only	30%	20%	D 2
	1. Additional labor (C. 3)			
	2. Power, heat, etc. (C. 3)			
1*	†**Soap** Factories	100%	80%	D 2
	1. Additional labor (C. 4)			
	2. Power, heat, etc. (C. 4)			
	3. If candle making	100%		
2 a	**Soda** Ash, in bags or barrels		5%	D 1

		1	2	3
813	**Soda** Fountains, Stocks of	3%	5%	D 2
814	†**Soda** Water Factories	20%	10%	D 2
	1. Additional labor (C. 2)			
	2. Power (C. 2)			
815	†**Spice** Mills, grinding, mixing and packing	50%	40%	D 3
	1. Additional labor (C. 3½)			
	2. Power, heat, etc. (C. 3½)			
816	**Spice** Stocks	5%	10%	D 3
	1. Grinding, not over one mill	30%		
	2. Power (C. 3½)			
	If over one mill, see Spice Mills.			
816½	**Sugar** Stocks (see Syrup and Sugar).			
817	**Sponges,** Stocks of	3%	5%	D 2
818	**Sporting** Goods, Fire Arms, etc	5%	10%	D 3
819	**Stables,** small private in mercantile buildings	10%		D 2
820	†**Stables,** large private, industrial, breweries, mill and mercantile	40%	40%	D 3
	*If over 100 bales of hay on premises.			
821	*†**Stables,** Bus, Express, Feed, Hotel, Dairy, Breeding, Stock, Transfer and Veterinary	60%	40%	D 3
822	*†**Stables,** Livery, Boarding, Sale	100%	40%	D 3
	If used for storage, repair or charging of automobiles, apply charges under 120.			
	If chopping or grinding in stables, see scale with Feed Stores.			
	Live and rolling stock with 820-1-2, on ground floor, take building rate, and if building is exposed, treat as removable.			
	If not on ground floor live and rolling stock to take rate of other contents.			
	If part on ground floor take average between building rate and rate of live and rolling stock in other stories.			
823	**Starch** in original packages	3%	5%	D 2
824	**Stationery.** (See Book Stores.)			
825	**Statuary** and High Art Stocks	5%	10%	D 4
826	**Steam** Fitters. (See Plumbers.)			
827	**Steel,** high-grade tool	3%	5%	D 3
828	**Stencil** Works. (See Rubber Stamps.)			
829	**Stone** Cutting (building stone)	5%	5%	D 1
	1. Additional labor (C. 1)			
830	†**Stone** Cutting and Sawing (power)	20%	5%	D 1
	1. Additional labor (C. 1)			
	2. Power (C. 1)			
831	**Stoves** and Stove Castings (warehouse)		5%	D 1
832	**Stove** Stocks	3%	5%	D 1
	1. If blacking with benzine	10%		
	2. Benzine in building, not over 10 gallons in metal can	10%		
833	**Stove** and Tinware Stocks	3%	5%	D 2
	1. Labor (C. 1)			
	2. Furnaces (C. 1)			
834	**Strawboard,** warehouses		5%	D 2
835	**Straw** Goods Stocks	10%	20%	D 4
836	**Studios,** painters' and sculptors			D 4
836½	**Studios,** teachers', music, elocution, etc.			D 2
837	**Surgical** Instruments. (See Instruments.)			
838	**Suspender** Factories. (See Sewing or Knitting Risks, according to work done)			

a

	1	2	3
Syrup and Sugar Stocks	3%	5%	D 2
Syrup and Sugar, storage		5%	D 2
Syrup Refining	10%	10%	D 2
1. Additional labor, heat, etc. (C. 2)			
Tack Stocks	3%	5%	D 3
Tailor Shops, with cutting, making, pressing and (or) cleaning (not over 10 hands)	5%	10%	D 2
1. If gasoline cleaning, not over 1 gal. in metal can	10%		
(If more than 1 occupancy, maximum charge 50%.)			
If over 10 hands see Sewing Risks.			
Tailors' Trimmings, wholesale	5%	10%	D 2
Tallow, Grease and Wax Mixing. See Grease Risks.			
Tanners' Supplies	5%	10%	D 2
Tarpaulin, Manf. (See Sewing Risks.)			
Taxidermists	20%	10%	D 4
Tea, Coffee and Spice Stocks. (See Coffee, etc.)			
Teas, Stocks of, in original packages..	5%	10%	D 2
1. Packing	10%		
Telegraph Offices, small (1 or 2 operators)			D 2
Telegraph Offices, large central	5%	10%	D 2
Telegraph Supply Stocks	5%	10%	D 2
Telephone Offices	5%	10%	
Furniture and fixtures class as			D 2
Switchboards class as			D 4
Tent Making. See Sewing Risks.			
Theatres. See Halls.			
Thread Stocks	5%	10%	D 3
Tile, encaustic, mosaic and marble, Stocks of	3%	5%	D 2
Tile Pipe (drainage and chimney) storage		5%	D 1
Tin Can Factories	20%	10%	D 3
1. Additional labor (C. 2)			
2. Power, Heat, etc. (C. 2)			
For other charges, see Machine Shops.			
Tin Plate, wholesale	3%	5%	D 3
Tinware Stocks	3%	5%	D 3
1. Labor (C. 1)			
2. Furnace (C. 1)			
Tobacco Cigar Manufactories. See Cigar Factories.			
Tobacco (plug) in original packages (storage)		5%	D 3
Tobacco, Domestic in packages	3%	5%	D 3
Tobacco, leaf in bales or imported tobacco	3%	5%	D 4
Tobacco Factories (fine cut)	40%	80%	D 3
1. Additional labor (C. 4)			
2. Power, heat, etc. (C. 4)			
Tobacco (snuff) Manufactories	25%	40%	D 4
1. Additional labor (C. 3½)			
2. Power, heat, etc. (C. 3½)			
Tobacco Factories (plug). Rate by analysis or special schedule, if any.			

		1	2
875	**Toilet** Goods, Stocks	5%	10%
876	**Toilet** and Jewelry Case Manufacturing. (See Jewelry Case Manuf.)		
877	**Toys** and Notions (small shops)	3%	5%
878	**Toys** and Notions (large and retail bazaars)	10%	20%
879	**Trimming** Factories. (See Sewing Risks.)		
880	**Trunk** and Valise Stocks	5%	10%
	1. Setting up or repairing on small scale, no woodworking	10%	
	2. Trimming	20%	
	(If over 2 hands, see Trunk Factories.)		
881	**Trunk** and Valise Factories, strictly leather (see Leather Sewing Risks).		
882	**Trunk** Factories (with woodwork), see 949.		
884	**Twine** and Cordage Stocks. (See also Rope Stocks, heavy.)	10%	20%
885	**Twine** and Cordage (Storage). (See Rope Stocks (Heavy.)		20%
886	**Type** Stocks, Printers'	3%	5%
887	†**Type** Foundries	50%	5%
	1. Additional labor (C. 1)		
	2. Power, Furnaces, etc. (C. 1)		
888	**Typewriter** Stocks and Supplies	3%	5%
896	**Umbrella** Stocks	5%	10%
	1. Labor (repairs) (C. 2)		
897	**Undertaking** Establishments	5%	10%
	1. Labor on box work, if any (hand)	10%	
898	**Undertakers'** Supply Stocks	5%	10%
899	**Upholsterers'** Stocks (no moss, tow or excelsior)	5%	10%
	If moss, tow, excelsior, etc., charge by scale for Feed Stores, with hay.		
900	**Upholstering** or Furniture Repair Shops (small)	25%	40%
	1. Additional labor, heat, etc. (C. 3½)		
	2. Varnishing or painting, regular	30%	
	3. Varnishing and (or) painting, occasional	10%	
901	***Upholstering** Establishments, using moss, tow, excelsior or other like inflammables	100%	80%
	1. Additional labor (C. 4)		
	2. Picker (hand)	50%	
	3. Picker (power)	100%	
	4. Power (C. 4)		
	(Charge for picker may be reduced one half if in a metal lined room with steam jet.)		

	1	2	3
Vacant Buildings (incomplete). (See Builders' Risks.)			
½**Vacant** Buildings (complete).			
As a rule should take rate of last occupancy. In no event while vacant should charge in column 1 be less than 15% for each vacated occupancy on ground floor, or less than one-half the total charges of its last special hazard occupancy.			
Valves, iron and brass, Stocks..........	3%	5%	D 1
Varnish, shellac. (See Shellac Varnish.)			
***Varnish** Warehouses (bulk), stored exclusively in approved steel or iron tanks....		40%	D 2
***Varnish** Stocks, large....................	20%	40%	D 2
1. Labor (mixing) (C. 3½)			
2. Power (C. 3½)			
3. Open lights or fire heat in stock rooms.	100%		
4. Swinging electric lights not protected by wire guards....................	50%		
(Not cumulative with charge 3.)			
5. If mixing on premises by hand.......	30%		
6. If mixing on premises by power......	60%		
7. Varnish drawing	30%		
(Not cumulative with 5 or 6.)			
***Varnish** Factories.			
**Boiling and Chimney House*..........	100%	320%	D 2
1. Additional labor (C. 5)			
a. **Thinning and Mixing House with benzine or naphtha limited to one day's supply*	100%	160%	D 2
2. Additional labor, power, etc. (C. 4½)			
b. **Thinning and Mixing House with turpentine*	100%	80%	D 2
3. Additional labor, power, etc. (C. 4)			
4. If open lights or fire heat in either of above, add	100%		
5. Swinging electric lights not protected by wire guards, in either of above add	50%		
(Not cumulative with charge for open lights.)			
c. **Storage House for varnish*........		40%	D 2
d. *Storage House for gum*...........		5%	D 2
Vegetables (see Markets).			
Veneer Stocks........................	10%	20%	D 3
Vinegar and Cider Stocks. (See Cider.)			
Vinegar Factories, cider vinegar only..	15%	20%	D 3
1. Additional labor (C. 3)			
2. Power, Heat, etc. (C. 3)			
†**Vinegar** Factories......................	100%	40%	D 3
1. Additional labor (C. 3½)			
2. Power, Heat, etc. (C. 3½)			

	1	2	3
Wagon Repositories. (See Carriage and Wagon Repositories.)			
Wall Paper Stocks. (See Paper, wall.)			
Warehouses. (See General Storage Warehouses.)			
Watches. (See Jewelry.)			
½**Waterworks.**..........................	5%	5%	D 1
1 Power (C. 1)			
Wheelrights. (See Blacksmith and Wagon Shops.)			

		1	2
932	**Whips,** Stocks of	5%	10%
933	**Whiskey** (see Liquors, wholesale).		
934	**Willow** Ware Stocks	10%	20%
935	**Willow** Ware Making (see Basket Making).		
936	**Window** Glass (see Glass).		
937	**Window** Shade Stocks (cloth)	5%	10%
	1. Labor (cutting, fitting, decorating, etc.) (C. 2)		
	2. Power (C. 2)		
938	**Window** Shade (cloth) Manufacturing	40%	80%
	1. Additional labor (C. 4)		
	2. Power, heat, etc. (C. 4)		
	3. Refinishing, no benzine	50%	
	4. Cleaning with benzine	100%	
	5. Not over 10 gallons benzine, in approved metal can	20%	
	6. Not over one barrel benzine stored on premises	50%	
939	**Wines** and Liquors (see Liquors).		
940	**Wire** Stocks and Wire Goods	3%	5%
941	**Wire** Workers	5%	5%
	1. Additional labor (C. 1)		
	2. Power, heat, etc. (C. 1)		
942	**Wood** Engraving (see Engraving, wood).		
943	**Wood** Fibre Ware, Stocks	5%	10%
944	**Wood** Mantels (see Mantels, wood).		
945	**Wood** Pulleys (see Pulleys).		
946	***Woodenware** Stocks	20%	40%
948	**Woodworking,** not connected with other industrial processes, nor otherwise provided for in Alphabetical List.		
	a. Woodworking, hand and (or) power, no power machines except saws, boring machines and (or) nailers, but not including carpenter, cabinet, cooper, upholstering or patterns shops (C. 3½)	25%	40%
	b. Carpenter, cabinet, cooper or pattern shops (star if with power machines except saws, boring machines and (or) nailers), with not over two power woodworking machines (C. 4)	40%	80%
	*c.**Same as *b*, with more than two power woodworking machines (excepting saws, boring machines and (or) nailers), provided with approved metal blower system (C. 4)	40%	80%
	*d.**Same as *c*, without approved metal blower system (C. 4½)	60%	160%
	1. Additional labor, power, heat, etc., according to combustibility as above. NOTE: In cooperage works, open fireplace and each patent metal barrel heater should be charged for as an independent furnace.		
	2. Occasional painting and (or) varnishing	20%	
	3. Painting, varnishing and (or) dipping (regular)	50%	

	1	2	3
4. Dip Tank, with cover, cumulative with charge 3	20%		
5. Dip Tank, without cover, cumulative with charge 3	40%		
NOTE: If tank contains naphtha or other like combustibles, or their compounds, double charge 4 or 5.			
Increase one-fifth for each tank over one, up to double the charge.			
6. If open heat devices or lights in room with power woodworking except saws, boring machines and (or) nailers and (or) painting or dipping, not less than	50%		
7. *Shavings Vaults (inside main buildings).* The following charges apply only to occupancy items *c* and *d*.			
a. Vault brick, arched or with parapetted fire walls through roof, cut off by approved fire door with automatic cut-off in metal duct	10%		
b. Vault brick, not arched or parapetted through roof with approved fire door and automatic cut-off in metal duct	30%		
c. Vault brick, not arched or parapetted through roof, and without approved fire door or automatic cut-off in duct	50%		
d. Vault (frame) in main building, or no Vault and wood refuse used for fuel without approved automatic feed and cut-off	100%		
e. If no approved steam jet with control valve outside of vault, increase any of above vault charges one-third.			

49 **Woodworking** connected with other industrial processes, unless otherwise provided for in Occupancy List.

NOTE: When woodworking is found with other industrial processes, it should take damageability of main occupancy.

1. When woodworking benches for private repairs or auxiliary work are found, occupancy should be rated on its own combustibility, as stated in Alphabetical List, and regular charge of 30% applied (see page 27, *b*).
2. When woodworking, in excess of No. 1, is found, with occupancies of a combustibility that grades lower than the preceding classification (948 *a* to *d*), all hazards should be charged for upon the scale of woodworking found in item 948.
3. When woodworking, in excess of No. 1, is found, with occupancies of a combustibility equal to or higher than that of woodworking as stated, all charges should be based upon the combustibility of the regular occupancy instead of upon that of woodworking.
4. If forging is found in same room with woodworking, After Charge should be applied at discretion for unsafe conditions.

a

		1	2	3
	5. *Painting and (or) Dipping.*			
	* Rooms or divisions with standard cut-off, occupied solely for painting and (or) dipping wooden goods, or for drying same by natural air, should grade as follows:			
	a. No naphtha or other like volatile combustibles or their compounds used (C. 3½)	25%	40%	D 2
	*b.**Naphtha or other like volatile combustibles or their compounds used (C. 4)	40%	80%	D 2
	1. Labor in section *a* (C. 3½), *b* (C. 4)			
	2. Dip Tank, with cover	20%		
	3. Dip Tank, without cover	40%		
	NOTE: If tank contains naphtha or other like combustibles or their compounds, double charge 2 or 3. Increase one-fifth for each tank over one, up to double the total charge.			
	4. If open heat devices or lights in room	50%		
950	**Wool** in Bales or Bags, storage		5%	D 1
	1. Labor (assorting) (C. 1)			
951	**Wool** in Bales or Bags with Grease, storage.		10%	D 1
	1. Labor (assorting) (C. 2)			
952	**Woolen** Goods	3%	5%	D 2
953	**Wrapper** Factories (see Sewing Risks).			
961	**Yarns,** Stocks of	3%	5%	D 2
962	**Yeast** Factories (dry). (See Flavoring Extracts with Dry Yeast Making)			
963	**Yeast** Factories	25%	40%	D 3
	1. Additional labor (C. 3½)			
	2. Power, heat, etc. (C. 3½)			
964	**Yeast** Warehouse		10%	D 3
	1. Labor (packing) (C. 2)			

TABLE OF CREDITS.

he following credits are percentages of *occupied building rate* and l be deducted before adding differential for contents:

OTE: *Partial Protection.* When a partial tenant in a building ains in his premises the protective features required by sections *a*, *g*, or *h*, the credits stated may be applied to the estimate of the t only, in the proportion that his floor area bears to entire floor of building.

For Protective Features.	*Deduct.*	*Maximum Credit.*
side Standpipe and hose attached (approved arrangement and water supply	5%	5 cents.
utside Standpipe, on buildings 3 stories and over	2%	5 "
re Escapes, with landings on each floor on buildings 3 stories and over	2%	5 "
utomatic Fire Alarm System, connected with paid fire department (approved) When found with watchman reduce credits *g* or *h* and the limits thereunder, one-half.	10%	20 "
asks and Pails of Water.		
1. In Industrial Risks, if one approved cask and 5 pails in good order, or in lieu, one approved chemical extinguisher to each 2,000 square feet of floor area	5%	5 "
2. In Mercantile Risks, above credit should be extended for chemical extinguishers only.		
atchman inside building with approved watch clock	5%	10 "
atchman with A. D. T. or other approved system reporting to central station (Not cumulative with credit *g*.)	10%	20 "
building is heated exclusively by hot water or steam produced in separate building, cut off by approved fire door, or if no heat (This credit not to apply when building contains stationary heating devices of any kind.)	5%	
walls and ceiling are covered with approved whitewash or fireproof paint	2%	5 "

(For Structural Features.)

hen building is of standard slow-burning construction	20%	
hen building is of semi-slow-burning construction (If heavy open construction but not up to the semi-slow-burning standard, one-half above credit may be allowed for superior construction.)	10%	
hen ground floor of building, without a basement, is cement, brick, earth, or otherwise non-combustible (This credit is cumulative with *k* and *l*.)	5%	
hen all floorways are double, interlined with waterproof paper with approved scuppering and drainage	5%	

CONTENTS TABLES.

The following tables show amount to be added to occupied building rate to obtain rate on contents, according to damageability and location in building under each grade of protection. The number at the head of each table corresponds with the same number in Basis Rate Tables.

When personal property is located on more than one floor of a building, the occupancy charge must be the average of the floors on which it is located, i. e., the sum of the charges divided by the number of floors.

Starred Occupancies.

In the preceding Alphabetical List, certain occupancies are designated by an asterisk, for reasons given in Section *d,* page 23. Under the theory of the contents differential set forth, pages 10 and 11, Appendix, the differential between these occupancies and their containing building should be less than with ordinary occupancies. This difference is a fixed sum for each grade of protection and is named at the head of each of the following tables. The amount named should be deducted from the differential stated in the table below, whether the contents be contained on one or more floors.

Example (D. 3) Starred Contents under table 70, situate basement, 1st, 2nd, 3rd and 4th floors, under First Class Protection.

66 + 55 + 66 + 72 + 79 = 338 ÷ 5 = 68 — 11 = 57c.

If the contents under above example were all contained on grade floor the differential would be 55 — 11 = 44c.

Under 5th and 6th class protection starred occupancies take same differential as ordinary occupancies.

CONTENTS TABLE

No. 55

ocation of Contents.	*D 1.*	*D 2.*	*D 3.*	*D 4.*
Sixth Class Protection.				
t	$0.12	$0.18	$0.30	$0.42
floor	.06	.11	.22	.33
floor	.12	.18	.30	.42
oor and over	.16	.23	.35	.48
Fifth Class Protection.				
t	$0.13	$0.21	$0.33	$0.45
floor	.07	.14	.25	.36
floor	.13	.21	.33	.45
oor and over	.17	.25	.38	.51
Four and a Half Class Protection.			(Deduct .05c for *)	
t	$0.16	$0.24	$0.37	$0.50
floor	.10	.17	.29	.41
floor	.16	.24	.37	.50
oor	.20	.29	.42	.56
floor and over	.24	.33	.47	.62
Fourth Class Protection.			(Deduct .07c for *)	
t	$0.18	$0.27	$0.40	$0.54
floor	.12	.20	.32	.45
floor	.18	.27	.40	.54
oor	.22	.32	.46	.60
loor and over	.26	.37	.51	.66
Third Class Protection.			(Deduct .08c for *)	
t	$0.20	$0.31	$0.45	$0.59
floor	.14	.24	.37	.50
floor	.20	.31	.45	.59
or	.24	.36	.50	.65
loor	.28	.40	.55	.71
or and over	.32	.45	.61	.77
Second Class Protection.			(Deduct .08c for *)	
t	$0.22	$0.34	$0.48	$0.63
floor	.16	.27	.40	.54
floor	.22	.34	.48	.63
oor	.26	.39	.54	.69
floor	.30	.44	.59	.75
or	.34	.48	.64	.81
or	.38	.53	.70	.87
floor and over	.42	.58	.75	.93
First Class Protection.			(Deduct .09c for *)	
t	$0.24	$0.37	$0.52	$0.67
loor	.18	.30	.44	.58
loor	.24	.37	.52	.67
or	.28	.42	.57	.73
oor	.32	.46	.62	.79
r	.36	.51	.68	.85
r	.40	.56	.73	.91
loor	.44	.60	.78	.97
oor and over	.48	.65	.84	1.03

CONTENTS TABLE

No. 60

Location of Contents.	*D 1.*	*D 2.*	*D 3.*	*D 4.*
Sixth Class Protection.				
Basement	$0.13	$0.20	$0.33	$0.46
Ground floor	.06	.12	.24	.36
Second floor	.13	.20	.33	.46
Third floor and over	.17	.25	.39	.52
Fifth Class Protection.				
Basement	$0.14	$0.22	$0.36	$0.49
Ground floor	.08	.15	.27	.39
Second floor	.14	.22	.36	.49
Third floor and over	.19	.28	.42	.56
Four and a Half Class Protection.			(Deduct .05c	for *)
Basement	$0.17	$0.26	$0.40	$0.54
Ground floor	.10	.18	.31	.44
Second floor	.17	.26	.40	.54
Third floor	.21	.31	.46	.61
Fourth floor and over	.26	.36	.52	.67
Fourth Class Protection.			(Deduct .07c	for *)
Basement	$0.19	$0.30	$0.44	$0.59
Ground floor	.13	.22	.35	.49
Second floor	.19	.30	.44	.59
Third floor	.24	.35	.50	.65
Fourth floor and over	.28	.40	.56	.72
Third Class Protection.			(Deduct .08c	for *)
Basement	$0.22	$0.34	$0.49	$0.64
Ground floor	.15	.26	.40	.54
Second floor	.22	.34	.49	.64
Third floor	.26	.39	.55	.71
Fourth floor	.31	.44	.60	.77
Fifth floor and over	.35	.49	.66	.84
Second Class Protection.			(Deduct .09c	for *)
Basement	$0.24	$0.37	$0.53	$0.69
Ground floor	.18	.30	.44	.59
Second floor	.24	.37	.53	.69
Third floor	.28	.43	.59	.76
Fourth floor	.33	.48	.64	.82
Fifth floor	.37	.53	.70	.89
Sixth floor	.42	.58	.76	.95
Seventh floor and over	.46	.63	.82	1.02
First Class Protection.			(Deduct .10c	for *)
Basement	$0.26	$0.40	$0.56	$0.73
Ground floor	.19	.33	.47	.64
Second floor	.26	.40	.56	.73
Third floor	.30	.45	.62	.80
Fourth floor	.35	.51	.68	.86
Fifth floor	.39	.56	.74	.93
Sixth floor	.43	.61	.79	1.00
Seventh floor	.48	.66	.85	1.06
Eighth floor and over	.52	.71	.91	1.13

CONTENTS TABLE

No. 65

Location of Contents.	*D 1.*	*D 2.*	*D 3.*	*D 4.*
Sixth Class Protection.				
nent	$0.14	$0.21	$0.36	$0.50
d floor	.07	.13	.26	.39
d floor	.14	.21	.36	.50
floor and over	.18	.27	.42	.57
Fifth Class Protection.				
nent	$0.16	$0.24	$0.39	$0.53
d floor	.09	.16	.29	.43
d floor	.16	.24	.39	.53
floor and over	.20	.30	.45	.61
Four and a Half Class Protection.			(Deduct .06c for *)	
nent	$0.18	$0.28	$0.43	$0.59
d floor	.11	.20	.34	.48
d floor	.18	.28	.43	.59
floor	.23	.34	.50	.66
th floor and over	.28	.39	.56	.73
Fourth Class Protection.			(Deduct .08c for *)	
nent	$0.21	$0.32	$0.48	$0.64
d floor	.14	.24	.38	.53
d floor	.21	.32	.48	.64
floor	.26	.38	.54	.71
h floor and over	..31	.43	.60	.78
Third Class Protection.			(Deduct .09c for *)	
nent	$0.24	$0.37	$0.53	$0.70
d floor	.17	.28	.43	.59
d floor	.24	.37	.53	.70
floor	.29	.42	.59	.77
h floor	.33	.48	.65	.84
floor and over	..38	.53	.72	.91
Second Class Protection.			(Deduct .10c for *)	
nent	$0.26	$0.41	$0.57	$0.75
d floor	.19	.32	.48	.64
d floor	26	.41	.57	.75
floor	.31	.46	.63	.82
h floor	.36	.52	.70	.89
floor	.40	.57	.76	.96
floor	.45	.63	.82	1.03
th floor and over	.50	.68	.89	1.10
First Class Protection.			(Deduct .10c for *)	
nent	$0.28	$0.44	$0.61	$0.79
d floor	.21	.35	.51	.69
d floor	.28	.44	.61	.79
floor	.33	.49	.67	.87
h floor	.37	.55	.74	.94
floor	.42	.60	.80	1.01
floor	.47	.66	.86	1.08
th floor	.52	.71	.92	1.15
h floor and over	.56	.77	.99	1.22

CONTENTS TABLE

No. 70

Sixth Class Protection.

Location of Contents.	*D 1.*	*D 2.*	*D 3.*	*D 4.*
Basement	$0.15	$0.23	$0.38	$0.54
Ground floor	.07	.14	.28	.42
Second floor	.15	.23	.38	.54
Third floor and over	.20	.29	.45	.61

Fifth Class Protection.

Location of Contents.	*D 1.*	*D 2.*	*D 3.*	*D 4.*
Basement	$0.17	$0.26	$0.42	$0.58
Ground floor	.09	.17	.32	.46
Second floor	.17	.26	.42	.58
Third floor and over	.22	.32	.49	.65

Four and a Half Class Protection. (Deduct .06c for *)

Location of Contents.	*D 1.*	*D 2.*	*D 3.*	*D 4.*
Basement	$0.20	$0.31	$0.47	$0.63
Ground floor	.12	.22	.36	.52
Second floor	.20	.31	.47	.63
Third floor	.25	.36	.53	.71
Fourth floor and over	.30	.42	.60	.78

Fourth Class Protection. (Deduct .08c for *)

Location of Contents.	*D 1.*	*D 2.*	*D 3.*	*D 4.*
Basement	$0.23	$0.35	$0.52	$0.69
Ground floor	.15	.26	.41	.57
Second floor	.23	.35	.52	.69
Third floor	.28	.41	.58	.76
Fourth floor and over	.33	.47	.65	.84

Third Class Protection. (Deduct .10c for *)

Location of Contents.	*D 1.*	*D 2.*	*D 3.*	*D 4.*
Basement	$0.26	$0.40	$0.57	$0.75
Ground floor	.18	.31	.47	.64
Second floor	.26	.40	.57	.75
Third floor	.31	.46	.64	.83
Fourth floor	.36	.52	.70	.90
Fifth floor and over	.41	.57	.77	.98

Second Class Protection. (Deduct .11c for *)

Location of Contents.	*D 1.*	*D 2.*	*D 3.*	*D 4.*
Basement	$0.28	$0.44	$0.62	$0.81
Ground floor	.20	.35	.51	.69
Second floor	.28	.44	.62	81
Third floor	.33	.50	.68	.88
Fourth floor	.38	.56	.75	.96
Fifth floor	.43	.62	.82	1.04
Sixth floor	.49	.67	.89	1.11
Seventh floor and over	.54	.73	.95	1.19

First Class Protection. (Deduct .11c for *)

Location of Contents.	*D 1.*	*D 2.*	*D 3.*	*D 4.*
Basement	$0.30	$0.47	$0.66	$0.86
Ground floor	.22	.38	.55	.74
Second floor	.30	.47	.66	.86
Third floor	.35	.53	.72	.93
Fourth floor	.40	.59	.79	1.01
Fifth floor	.45	.65	.86	1.08
Sixth floor	.51	.71	.93	1.16
Seventh floor	.56	.77	1.00	1.24
Eighth floor and over	.61	.83	1.06	1.31

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CONTENTS TABLE

No. 75

ocation of Contents.	D 1.	D 2.	D 3.	D 4.
Sixth Class Protection.				
nt	$0.16	$0.25	$0.41	$0.57
floor	.08	.15	.30	.45
floor	.16	.25	.41	.57
oor and over	.21	.31	.48	.66
Fifth Class Protection.				
nt	$0.18	$0.28	$0.45	$0.62
floor	.10	.18	.34	.49
floor	.18	.28	.45	.62
oor and over	.24	.34	.52	.70
Four and a Half Class Protection.			(Deduct .07c for *)	
nt	$0.21	$0.33	$0.50	$0.68
floor	.13	.23	.39	.55
floor	.21	.33	.50	.68
floor	.27	.39	.57	.76
floor and over	.32	.45	.64	.84
Fourth Class Protection.			(Deduct .09c for *)	
nt	$0.24	$0.37	$0.55	$0.74
floor	.16	.28	.44	.61
floor	.24	.37	.55	.74
oor	.30	.44	.62	.82
floor and over	.35	.50	.70	.90
Third Class Protection.			(Deduct .11c for *)	
nt	$0.28	$0.42	$0.61	$0.80
floor	.19	.33	.50	.68
floor	.28	.42	.61	.80
oor	.33	.49	.68	.89
floor	.38	.55	.75	.97
oor and over	.44	.62	.83	1.05
Second Class Protection.			(Deduct .11c for *)	
nt	$0.30	$0.47	$0.66	$0.86
floor	.22	.37	.55	.74
floor	.30	.47	.66	.86
oor	.36	.53	.73	.95
floor	.41	.60	.80	1.03
oor	.47	.66	.88	1.11
loor	.52	.72	.95	1.19
floor and over	.58	.79	1.02	1.27
First Class Protection.			(Deduct .12c for *)	
nt	$0.32	$0.50	$0.70	$0.92
floor	.24	.41	.59	.79
floor	.32	.50	.70	.92
oor	.38	.57	.78	1.00
floor	.43	.63	.85	1.08
oor	.49	.70	.92	1.16
oor	.54	.76	.99	1.24
floor	.60	.82	1.07	1.33
floor and over	.65	.89	1.14	1.41

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No. 80

Sixth Class Protection.

Location of Contents.	*D 1.*	*D 2.*	*D 3.*
Basement	$0.17	$0.26	$0.44
Ground floor	.08	.16	.32
Second floor	.17	.26	.44
Third floor and over	.23	.33	.51
Fifth Class Protection.			
Basement	$0.19	$0.30	$0.48
Ground floor	.11	.20	.36
Second floor	.19	.30	.48
Third floor and over	.25	.37	.55
Four and a Half Class Protection.			(Deduct .07c f
Basement	$0.23	$0.35	$0.53
Ground floor	.14	.25	.42
Second floor	.23	.35	.53
Third floor	.28	.42	.61
Fourth floor and over	.34	.48	.69
Fourth Class Protection.			(Deduct .10c f
Basement	$0.26	$0.40	$0.59
Ground floor	.17	.30	.47
Second floor	.26	.40	.59
Third floor	.32	.47	.67
Fourth floor and over	.38	.53	.74
Third Class Protection.			(Deduct .11c f
Basement	$0.29	$0.45	$0.65
Ground floor	.21	.35	.53
Second floor	.29	.45	.65
Third floor	.35	.52	.73
Fourth floor	.41	.59	.80
Fifth floor and over	.47	.66	.88
Second Class Protection.			(Deduct .12c f
Basement	$0.32	$0.50	$0.70
Ground floor	.23	.40	.59
Second floor	.32	.50	.70
Third floor	.38	.57	.78
Fourth floor	.44	.63	.86
Fifth floor	.50	.70	.94
Sixth floor	.55	.77	1.01
Seventh floor and over	.61	.84	1.09
First Class Protection.			(Deduct .13c f
Basement	$0.34	$0.54	$0.75
Ground floor	.26	.44	.63
Second floor	.34	.54	.75
Third floor	.40	.61	.83
Fourth floor	.46	.67	.90
Fifth floor	.52	.74	.98
Sixth floor	.58	.81	1.06
Seventh floor	.64	.88	1.14
Eighth floor and over	.69	.95	1.21

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CONTENTS TABLE

No. 85

Location of Contents.	*D 1.*	*D 2.*	*D 3.*	*D 4.*
Sixth Class Protection.				
Basement	$0.18	$0.28	$0.46	$0.65
Ground floor	.09	.17	.34	.51
Second floor	.18	.28	.46	.65
Third floor and over	.24	.35	.55	.74
Fifth Class Protection.				
Basement	$0.20	$0.32	$0.51	$0.70
Ground floor	.11	.21	.38	.56
Second floor	.20	.32	.51	.70
Third floor and over	.27	.39	.59	.79
Four and a Half Class Protection.			(Deduct .08c for *)	
Basement	$0.24	$0.37	$0.57	$0.77
Ground floor	.15	.26	.44	.63
Second floor	.24	.37	.57	.77
Third floor	.30	.44	.65	.86
Fourth floor and over	.36	.51	.73	.95
Fourth Class Protection.			(Deduct .10c for *)	
Basement	$0.28	$0.42	$0.63	$0.83
Ground floor	.18	.32	.50	.69
Second floor	.28	.42	.63	.83
Third floor	.34	.50	.71	.93
Fourth floor and over	.40	.57	.79	1.02
Third Class Protection.			(Deduct .12c for *)	
Basement	$0.31	$0.48	$0.69	$0.91
Ground floor	.22	.37	.57	.77
Second floor	.31	.48	.69	.91
Third floor	.37	.55	.77	1.00
Fourth floor	.44	.63	.85	1.10
Fifth floor and over	.50	.70	.94	1.19
Second Class Protection.			(Deduct .13c for *)	
Basement	$0.34	$0.53	$0.75	$0.98
Ground floor	.25	.42	.62	.84
Second floor	.34	.53	.75	.98
Third floor	.40	.60	.83	1.07
Fourth floor	.47	.67	.91	1.16
Fifth floor	.53	.75	.99	1.26
Sixth floor	.59	.82	1.08	1.35
Seventh floor and over	.65	.89	1.16	1.44
First Class Protection.			(Deduct .14c for *)	
Basement	$0.37	$0.57	$0.80	$1.04
Ground floor	.27	.46	.67	.90
Second floor	.37	.57	.80	1.04
Third floor	.43	.64	.88	1.13
Fourth floor	.49	.72	.96	1.22
Fifth floor	.55	.79	1.04	1.32
Sixth floor	.61	.86	1.13	1.41
Seventh floor	.68	.93	1.21	1.50
Eighth floor and over	.74	1.01	1.29	1.60

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CONTENTS TABLE

No. 90

Location of Contents.	*D 1.*	*D 2.*	*D 3.*	*D 4.*
Sixth Class Protection.				
Basement	$0.19	$0.30	$0.49	$0.69
Ground floor	.09	.18	.36	.54
Second floor	.19	.30	.49	.69
Third floor and over	.25	.37	.58	.79
Fifth Class Protection.				
Basement	$0.22	$0.34	$0.54	$0.74
Ground floor	.12	.22	.41	.59
Second floor	.22	.34	.54	.74
Third floor and over	.28	.41	.62	.84
Four and a Half Class Protection.			(Deduct .08c for *)	
Basement	$0.25	$0.39	$0.60	$0.81
Ground floor	.16	.28	.47	.66
Second floor	.25	.39	.60	.81
Third floor	.32	.47	.69	.91
Fourth floor and over	.39	.55	.77	1.01
Fourth Class Protection.			(Deduct .11c for *)	
Basement	$0.29	$0.45	$0.66	$0.88
Ground floor	.19	.33	.53	.74
Second floor	.29	.45	.66	.88
Third floor	.36	.53	.75	.98
Fourth floor and over	.42	.60	.84	1.08
Third Class Protection.			(Deduct .12c for *)	
Basement	$0.33	$0.51	$0.73	$0.96
Ground floor	.23	.39	.60	.82
Second floor	.33	.51	.73	.96
Third floor	.40	.59	.82	1.06
Fourth floor	.46	.66	.91	1.16
Fifth floor and over	.53	.74	.99	1.26
Second Class Protection.			(Deduct .14c for *)	
Basement	$0.36	$0.56	$0.79	$1.04
Ground floor	.26	.45	.66	.89
Second floor	.36	.56	.79	1.04
Third floor	.43	.64	.88	1.13
Fourth floor	.49	.71	.97	1.23
Fifth floor	.56	.79	1.05	1.33
Sixth floor	.62	.87	1.14	1.43
Seventh floor	.69	.94	1.23	1.53
First Class Protection.			(Deduct .14c for *)	
Basement	$0.39	$0.61	$0.84	$1.10
Ground floor	.29	.49	.71	.95
Second floor	.39	.61	.84	1.10
Third floor	.45	.68	.93	1.20
Fourth floor	.52	.76	1.02	1.30
Fifth floor	.58	.83	1.10	1.39
Sixth floor	.65	.91	1.19	1.49
Seventh floor	.72	.99	1.28	1.59
Eighth floor and over	.78	1.06	1.37	1.69

CONTENTS TABLE

No. 95

Location of Contents.	*D 1.*	*D 2.*	*D 3.*	*D 4.*
Sixth Class Protection.				
Basement	$0.20	$0.31	$0.52	$0.73
Ground floor	.10	.19	.38	.57
Second floor	.20	.31	.52	.73
Third floor and over	.27	.39	.61	.83
Fifth Class Protection.				
Basement	$0.23	$0.35	$0.57	$0.78
Ground floor	.12	.23	.43	.62
Second floor	.23	.35	.57	.78
Third floor and over	.30	.44	.66	.88
Four and a Half Class Protection.			(Deduct .09c for *)	
Basement	$0.27	$0.41	$0.63	$0.86
Ground floor	.16	.29	.49	.70
Second floor	.27	.41	.63	.86
Third floor	.34	.49	.72	.96
Fourth floor and over	.41	.58	.82	1.06
Fourth Class Protection.			(Deduct .11c for *)	
Basement	$0.31	$0.47	$0.70	$0.93
Ground floor	.20	.35	.56	.78
Second floor	.31	.47	.70	.93
Third floor	.38	.55	.79	1.04
Fourth floor and over	.45	.64	.88	1.14
Third Class Protection.			(Deduct .13c for *)	
Basement	$0.35	$0.54	$0.77	$1.02
Ground floor	.24	.42	.63	.86
Second floor	.35	.54	.77	1.02
Third floor	.42	.62	.86	1.12
Fourth floor	.49	.70	.96	1.23
Fifth floor and over	.56	.78	1.05	1.33
Second Class Protection.			(Deduct .14c for *)	
Basement	$0.38	$0.59	$0.83	$1.09
Ground floor	.28	.47	.70	.94
Second floor	.38	.59	.83	1.09
Third floor	.45	.67	.93	1.20
Fourth floor	.52	.75	1.02	1.30
Fifth floor	.59	.83	1.11	1.40
Sixth floor	.66	.92	1.20	1.51
Seventh floor and over	.73	1.00	1.30	1.61
First Class Protection.			(Deduct .15c for *)	
Basement	$0.41	$0.64	$0.89	$1.16
Ground floor	.30	.52	.75	1.01
Second floor	.41	.64	.89	1.16
Third floor	.48	.72	.98	1.26
Fourth floor	.55	.80	1.07	1.37
Fifth floor	.62	.88	1.17	1.47
Sixth floor	.69	.96	1.26	1.58
Seventh floor	.75	1.04	1.35	1.68
Eighth floor and over	.82	1.12	1.44	1.78

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CONTENTS TABLE

No. 100

Location of Contents.	*D 1.*	*D 2.*	*D 3.*	*D 4.*
Sixth Class Protection.				
Basement	$0.21	$0.33	$0.55	$0.76
Ground floor	.10	.20	.40	.60
Second floor	.21	.33	.55	.76
Third floor and over	.28	.41	.64	.87
Fifth Class Protection.				
Basement	$0.24	$0.37	$0.60	$0.82
Ground floor	.13	.25	.45	.66
Second floor	.24	.37	.60	.82
Third floor and over	.31	.46	.69	.93
Four and a Half Class Protection.			(Deduct .09c for *)	
Basement	$0.28	$0.44	$0.67	$0.90
Ground floor	.17	.31	.52	.74
Second floor	.28	.44	.67	.90
Third floor	.36	.52	.76	1.01
Fourth floor and over	.43	.61	.86	1.12
Fourth Class Protection.			(Deduct .12c for *)	
Basement	$0.32	$0.50	$0.74	$0.98
Ground floor	.22	.37	.59	.82
Second floor	.32	.50	.74	.98
Third floor	.40	.58	.83	1.09
Fourth floor and over	.47	.67	.93	1.20
Third Class Protection.			(Deduct .14c for *)	
Basement	$0.37	$0.57	$0.81	$1.07
Ground floor	.26	.44	.67	.91
Second floor	.37	.57	.81	1.07
Third floor	.44	.65	.91	1.18
Fourth floor	.51	.74	1.01	1.29
Fifth floor and over	.59	.82	1.10	1.40
Second Class Protection.			(Deduct .15c for *)	
Basement	$0.40	$0.62	$0.88	$1.15
Ground floor	.29	.50	.73	.99
Second floor	.40	.62	.88	1.15
Third floor	.47	.71	.98	1.26
Fourth floor	.55	.79	1.07	1.37
Fifth floor	.62	.88	1.17	1.48
Sixth floor	.69	.96	1.27	1.59
Seventh floor and over	.77	1.05	1.36	1.70
First Class Protection.			(Deduct .16c for *)	
Basement	$0.43	$0.67	$0.94	$1.22
Ground floor	.32	.54	.79	1.06
Second floor	.43	.67	.94	1.22
Third floor	.50	.76	1.03	1.33
Fourth floor	.58	.84	1.13	1.44
Fifth floor	.65	.93	1.23	1.55
Sixth floor	.72	1.01	1.32	1.66
Seventh floor	.79	1.10	1.42	1.77
Eighth floor and over	.87	1.18	1.52	1.88

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OMMUNICATING OCCUPANCIES.

en all openings in a division or party wall are protected by
d fire doors, the mutual exposures of the divisions so separated
ɔe figured by the following tables, the several percentages being
f the occupied building rate of the exposing division. Exposure
be counted through one wall only.

rE: The limit of charges through communicating occupancies,
ired below, should in no case exceed 80% of the increase that
esult if building were rated omnibus.

Table No. 1.

Standard fire door on one side of wall.

Exposing Occupancies.

	C1	C2	C3-3½	C4-4½	C5
....	3%	3%	3%	5%	5%
....	3%	3%	4%	5%	8%
....	3%	4%	6%	8%	10%
....	4%	5%	8%	10%	12%

Table No. 2.

ard fire door on both sides, or bank-vault door on one side.

Exposing Occupancies.

	C1	C2	C3-3½	C4-4½	C5
....	2%	2%	2%	3%	3%
....	2%	2%	3%	3%	4%
....	2%	3%	4%	4%	5%
....	3%	4%	5%	5%	6%

rE: A fire wall with double bank vault doors or with standard
.e doors may be treated as a solid fire wall.

The charges in the table apply to stocks. The absorbed ex-
of the building or division itself should be that of D. 1 contents.

The Tables are intended for main divisions of a risk and not
.ouses, dry rooms, etc.

The total charge should be increased one-fifth for each door
e up to double the charge.

When communication is through a covered bridge with standard
each end, no charge.

Occupancies classed as C. 6 and 7 (i. e., Indefinite and Unclassi-
radiate exposure by their classification in column 2 in Alpha-
List in Brick Tariff (see Table of Charges for Combustibility,
ndix).

Fluid Contents: When the exposing division contains a stock
ed of combustible fluids or substances which through heat are
ɔ become combustible fluids, charge should be doubled.

When a *solid fire wall* adjoins a starred risk or a stock of ex-
, increase rate of next building and contents 5% for exposure
arred and 10% from explosive occupancy.

charge in any of the preceding tables should be increased by
ercentages, which are also cumulative with the charge under *g*
ld Contents.

rE: Fluid combustibles embrace wholesale drugs and all large
of spirits, turpentine, oils, etc.; also stocks of acids or chemicals
e liable to produce combustible or explosive compounds and
grease risks generally, which under high heat become as fluid
ll flow through fire doors or the interstices of the walls as
as spirits or gasoline. As wholesale drugs and all volatile oils
the explosion hazard, as well as the tendency to flow through
s, the explosion charge should be made to adjoining risks, even
lid fire walls.

AFTER CHARGES.

The following punitive charges for unsafe arrangements or conditions are fixed amounts and not percentages. They should be added to building and contents after final rate, including exposures, has been figured, in order that change may not necessitate a re-rating. The charges are fixed amounts for each $100 at risk instead of percentages of Basis Rate:

Ch[illegible]

a. ***Heating Arrangements*** [illegible] or furnaces or thei[illegible] neys, open fire plac[illegible] if any, for safe arra[illegible] to gravity of defect[illegible]

b. ***Lighting Arrangements*** [illegible] lamps, electric lights, [illegible] to charge, if any, for [illegible] according to gravity of [illegible]

c. ***Motive Power Arrangeme***[illegible] This charge should [illegible] to regular charge, if [illegible] ment, and should in[illegible] diable at small exp[illegible] charge will probably [illegible] according to gravity [illegible]

d. ***General Untidiness or O***[illegible] objectionable feature [illegible] tion of premises, not [illegible] table, add according [illegible] ...c to $1.00

NOTE: The follow[illegible] be made for the hazard[illegible]mmonly found under this head:

1. For absence of metal lockers with self-closing doors, in industrial risks where workmen's clothes are liable to be soiled with grease or paint......................	5c to 10c
2. No approved metal waste cans in industrial risks where oily waste, rags or other refuse are found........................	5c to 10c
3. No approved drip cups under shaft-bearings, unless floor is non-combustible.......	5c to 10c
4. No approved drip pans under printing presses, or drills, lathes or boring machines in metal workers, unless floor is non-combustible	5c to 10c
5. No signs prohibiting smoking in industrial risks grading higher combustibility than (C. 3)	5c to 10c
6. Flexible rubber tubes, used with natural gas.	5c to 25c

e. ***Taxes,*** Municipal or State, charge according to circumstance.

EXAMPLES.

NOTICE: The rating sheets published for use with this system are largely self-explanatory that the following examples are given erely to show the general method of application as stated in Direcons, page 15.

The examples are all computed from basis rate table No. 70 and ontents table of same number and such of the charges as do not appear the description of each risk, are assumed for purpose of illustration.

SINGLE OCCUPANCY.

Example No. 1.

unicipal Protection: Class 6.
uilding: One story *B;* 20 x 80 ft.; no basement; wood ceiling; wooden cornice, not cut off.
Retail drugs with paints and oils.

ory	$0.70			
no basement	.04			.66
(Charges.)				
e floor	2%			
	2%			
not cut off	3%			
l drugs	10%	20%		
nts and oils	10%			
extended	27%	+ 20%	= 47% =	.31
rate				$0.97
(Contents.)				
st floor)				.28
				$1.25

Example No. 2.

Municipal Protection: Class 1.
Building: Five story and basement B; 50 x 100 ft.
Occupancy: Wholesale dry goods, basement used for active business purposes.

Basis rate				$0.48
(Charges.)				
Area 5000 ft.; six floors (including basement	22%			
2 Walls, side, deficient 4 in. each, at 4%	8%			
2 Parapets, deficient 12 in. each in height at 2%	4%			
5 Floorways, grade B, "below *a*" at 5% each	25%			
One additional opening "below *a*," each floor at 1%	5%			
Occupancy, wholesale dry goods	5%	10%		
Total charges extended	69%	+ 10%	= 79% =	.38
Occupied building rate				$0.86
(Contents.)				
Wholesale dry goods, 5 floors and basement (D. 2)=309÷6=				.52
Rate of stock				$1.38

a

MULTIPLE OCCUPANCY.

Example No. 3.

Municipal protection: Class 4.

Building: Two story and basement B: 100 x 80 ft.

Occupancy: Basement not used for active business purposes.
Ground floor: Retail grocery; Drug store with paints and oils; Hardware, no tinwork; Furniture with repairs (no painting, varnishing or upholstering).
Second floor: Public Hall, no stage or scenery; Photograph Gallery and Offices.

Basis rate.. $0.58

(Charges.)

Area: 8000 ft.; (2 floors excluding basement)	15%
2 Walls (supporting) 2 in. deficient 2% each	4%
2 Parapets, 6 in. deficient, 2% each......	4%
2 Parapets deficient in thickness 2% each	4%
3 Partitions, wood lath and plaster, between ground floor occupancies, 3% each	9%
Wooden awning..........................	5%
Photographer's sky light 200 sq. ft.......	9%

(Occupancies.)

Grocery	5%	10%
Hardware	5%	10%
Furniture	10%	20%
Add for repairs....................	10%	
Drug store..........................	10%	20%
Add for paints and oils.............	10%	
Public Hall..........................	10%	
Photograph Gallery	5%	10%

Total charge extended.............. 115% + 20% =135% = .78

Occupied building rate.. $1.36

(Contents.)

Groceries	D 2	(1st floor and basement)..	$0.31 + 1.36 =$1.67
Drugs	D 3	(1st floor and basement)..	.47 + 1.36 = 1.83
Hardware	D 2	(Ground floor).............	.26 + 1.36 = 1.62
Furniture	D 2	(Ground floor).............	.26 + 1.36 = 1.62
Hall Furniture	D 2	(2nd floor)................	.35 + 1.36 = 1.71
Photographer	D 4	(2nd floor)................	.69 + 1.36 = 2.05
Offices	D 2	(2nd floor)................	.35 + 1.36 = 1.71

a

RECONSTRUCTED

FRAME TARIFF

EMBRACING

FRAME, IRON-CLAD AND BRICK-VENEERED BUILDINGS AND THEIR CONTENTS.

EXPLANATORY.

The Frame Tariff published with earlier editions of this system was origally constructed for the purpose of testing the practicability of the Exposure ɔrmulas, the sole end in view at the time being to provide a flexible frame riff that could readily be adapted to the level of prevailing rates in any state order that the tests might be made under conditions as diverse as possible. ıe first experiments resulted in the tariff itself, as well as the Exposure ɔrmulas, being put to use at once in several states, and it has continued in rvice ever since in a constantly widening field.

Encouraged by this fact to go on and complete the system, the author at ıce took up the work of constructing a Brick Tariff, which was not published ıtil the Frame Tariff and Exposure Formulas had been in use for nearly a ıar.

In the meantime experience has suggested that material advantages would crue from a reconstruction of the Frame Tariff upon the same principles which, ter on, were embodied in the Brick Tariff. On the theory that it is always ıst to let well-enough alone, there is room to question the advisability of tempting to improve a thing that so far seems to have given entire satisfacɔn, but the determining motive in the change is a desire to make the system as ıarly harmonious in all its parts as possible.

An inspection of the two tariffs will show that the most prominent differıce between them lies in the fact that the basis-rates in the Brick Tariff are ırely structural while in the Frame Tariff they embody both structure and cupancy. In adapting the latter to use in new states it has been necessary r raters to establish, empirically, a separate basis-rate for each property ass, and the basis-rates selected in the several states where the system is in ıe show a considerable deviation from the uniform relativity among property asses that is established by the Brick Tariff.

Aside from this, some difficulty has been found in reaching a satisfactory eatment of multiple occupancy in frame and brick-veneered buildings. Multiple cupancy frames, especially those with more than one ground floor stock, are ıusual. On the other hand, multiple occupancy brick-veneered buildings, hich are necessarily rated in the same manner as frames, are not uncommon, ıd it is desirable that some uniform and simple method of measuring the ızard of these omnibus buildings and their contents be provided.

The methods of treating the mutual exposures of the several occupancies in ames and iron-clads differ so widely from the treatment of this hazard in ·ick Tariffs, that the problem of reconciliation has been full of difficulties. ıis may best be explained, perhaps, by the following hypothetical case:

Assuming that A, occupying a one-story *B.* building with a dry goods and ot and shoe stock, decides to run a frame or lath and plaster partition through e middle, and sell his boot and shoe stock with good will, to B.

Under existing brick tariffs the increase in rate caused by two occupancies stead of one would be, possibly, 5 to 10 cents.

If, however, the building were frame instead of brick, the increase of rate ɔuld probably be from 50 to 75 cents.

The *internal* structure of frame and brick buildings is practically the same, d the exposure of each occupancy to the others is identical from the standpoint physical hazard, but in frame buildings the charge for additional occupancies usually from five to ten times as great as in bricks.

From the standpoint of internal hazard the analogy between the reciprocal exposure of occupancies in omnibus brick and omnibus frame or brick-veneered buildings seems perfect, but if we turn our attention to external frame exposures we are confronted by a conflicting analogy no less perfect. If the original building had been frame, and A. had cut it in halves and constructed mutually facing frame walls in lieu of the inside partition, it would have constituted a frame row of two, for which the mutual exposure charge of the two risks, in all frame tariffs, would be even greater than the charge for an additiona occupancy in the same building.

In the face of these contradictory analogies, that of the frame row clearly has the right of way, because it is sanctioned by usage. This reduces the problem to the reconstruction of the Frame Tariff to harmonize more closely with the structure and methods of the Brick Tariff, without materially disturbing the relations established by usage in the rates of frame, iron clad and brick-veneered buildings, whether of single or multiple occupancy, unexposed or exposed.

This has been effected through a new occupancy list in the frame tariff, which is made to agree, structurally, with the occupancy list in the brick tariff, except in the fact that it has two columns of charges instead of three. In the brick tariff, three columns were necessary, as explained in preface, in order to produce a proper increase in rate for additional occupancies and a proper differential between the building and its contents, according to the damageability of the latter. In frame risks, under low grades of protection, no difference is recognized between the hazard of occupied building and its contents unless exposed and, when exposed, the difference is based upon removability and not damageability. The natural inference from this must be that the third column of the brick tariff (necessitated by a differential which does not exist in frame risks, excepting under the higher grades of protection) is superfluous.

The necessity for making the multiple occupancy rate in Frame Tariff agree closely with the frame row of like occupancy, precludes the use of the classification in Appendix, so far as combustibility and damageability are concerned, though the classification of causes remains available for use in rating nondescript risks not provided for in the Alphabetical Occupancy List.

In lieu of the classification of combustibility and damageability, the exigencies of the case have been met by making a total occupancy charge that will produce a rate for each specific class, which substantially agrees with its average rate as found in existing tariffs. This total charge is then apportioned to columns 1 and 2 by placing in the former enough to approximate the radiated exposure of the risk under the 40 per cent exposure standard and placing the balance of the total charge in column 2 in lieu of the combustibility charge found in column 2 in Brick Tariff. In all the minor occupancies where the quantity of combustibles is negligible, as well as in all stocks that would ordinarily class as C. 1 and C. 2, this leaves no remainder to appear in column 2.

These changes make the process of figuring the individual rate of a risk practically the same with the Frame as with the Brick Tariff and the rates so produced will be found to approximate closely to existing usage with multiple as well as with single occupancy risks. With the former, the rates will be found to be slightly lower than those of a frame row of like occupancy under the lower grades of municipal protection, and somewhat higher under the higher grades of protection. This intended result has the merit of consistency, for in the omnibus risk we have the mutual exposures of occupancies only, while in the row the mutual exposures are those of both buildings and contents, each to the others. Under inferior grades of protection, where there is little or no chance of stopping a fire after it is once under headway, the omnibus building is the lesser hazard as compared with the frame row. On the other hand, a fire once started in an omnibus building is more difficult to control through fire-fighting devices than a fire of equal proportions would be in a single building of a row; hence, under the higher grades of municipal protection, the frame row is the lesser hazard as compared with the omnibus building of like occupancy.

b

It remains to point out one more important change that seems amply justified by common sense, even if it is a departure from precedent.

In all frame tariffs of the so-called National Board form, under which the small town business of the country has been rated in the past, it has been customary to allow full credit for municipal protection to mercantile risks only. With other classes there has been no uniformity of practice. In some states, frame hotels, boarding houses, churches, schools, court houses, carpenter and cooper shops, livery stables and other specific classes, are all rated under the sixth grade of protection. In other states, some or all of these classes are rated under grades 4 and 6, or 2, 4 and 6.

It is clear that carpenter and cooper shops, broom-corn and mattress factories, hay and broom-corn warehouses, livery stables, opera houses and a few other classes are notoriously rapid burners, and that in case of fire the destruction is liable to be complete before any fire department can reach the ground, but it is not equally clear why dwellings, churches, schools, court houses, boarding houses, hotels, etc., have not received as much credit for fire department protection as frame store buildings and their contents. While there is room to contend that there is a deterioration in the moral character of frame risks commensurate with the higher grades of fire department protection, this deterioration is unquestionably as great with frame mercantile risks as with other classes. Be this as it may, the credit allowed to frames for municipal protection in this tariff is about one-third less than the credit allowed to bricks, and this in itself is enough to cover a good deal of deterioration. In this edition equal credit is allowed for fire department protection to all classes excepting the quick-burners. These are designated by a star in the alphabetical list and a simple method of treatment provided. It is hoped that this will cure the discrimination among classes which has characterized frame tariffs in the past.

The advantages likely to result from the reconstructed Frame Tariff may be summed up as follows:—

1st—It will produce a more logical differentiation in frame risks, according to height, area and occupancy.

2nd—It will establish the same permanent and uniform relativity among frame classes in the several states that is established among property classes by the Brick Tariff.

3rd—It will make it as easy to adapt the Frame Tariff to each state as it has been to adapt the Brick Tariff, and it will save the necessity for a separate edition for each state.

4th—It makes it possible to figure the rates of multiple occupancy frame and brick-veneered buildings and their contents by a method as simple and direct as that provided by the Brick Tariff.

5th—It will simplify the method of figuring exposures to the contents of omnibus frame and brick-veneered buildings.

6th—It will make it possible to utilize in frame as well as brick risks, the classification in Appendix, in rating the nondescript risks for which no tariff can possibly provide specific treatment.

The foregoing explanation is needless to those who have never used the tariff, but it is submitted for the information of those who have been using the previous editions, in the belief that the reconstruction will meet their cordial approval, and that no further structural changes will be necessary.

As the reconstruction will not cause any material disturbance in the rates already established by the system, it may be considered advisable in states where it has entered into general use to continue the former edition of the tariff in service, and to this there can be no serious objection.

DIRECTIONS FOR FRAME TARIFF.

NOTE: Unless otherwise stated, all charges and credits are percentages of the basis rate of the risk to be rated.

Iron-clad and brick-veneered buildings and their contents are to be rated in the same manner as frames, except as to external exposures, for which consult Exposure Formulas.

TO RATE BUILDINGS (UNEXPOSED.)

Under all grades of municipal protection.

(*Single Occupancy.*)

a. Enter on rating sheet the proper basis rate, according to height and municipal protection; also charges and credits from "Table of Charges and Credits", page 11. Then refer to Alphabetical List of Occupancies and note all charges connected with occupancy found in columns 1 and 2. The difference between the totals of charges and credits will show the percentage of basis rate to be added to the latter to obtain the occupied building rate, which should be reduced by credits, if any, found in Table of Credits for protective features, page 41.

(*Multiple Occupancy or Omnibus.*)

(*Embracing all buildings with two or more occupancies under one continuous roof*).

b. Enter on rating sheet the basis rate and all charges and credits from Table of Charges and Credits, page 11, in the same manner as for single occupancy buildings. Then refer to Alphabetical List of Occupancies and find the total of charges in column 1 for all occupancies, increasing this by the highest charge for any occupancy in column 2. The difference between the totals of charges and credits in rating sheet will show the percentage of the basis rate to be added to it in order to establish the occupied rate of building, which should be reduced by credits, if any, found in Table of Credits for Protective Features, page 41.

TO RATE CONTENTS OF UNEXPOSED BUILDINGS.

c. In Towns of Class 4, 4½, 5 or 6.

Contents in all cases take building rate, whether single or multiple occupancy.

d. In Cities of Class 1, 2 or 3.

Contents—whether single or multiple occupancy buildings—take building rate plus one-third the differential from contents tables used for rating stocks in brick buildings in same town. See Contents Tables, Brick Tariff.

NOTE: When buildings are exposed, see note under Contents Table, page 7, Exposure Formulas.

(*Exceptions, applicable to all grades of protection.*)

e. In rating hotels with two or more ground floor stocks, add only 80 per cent. of the total of the charges for ground floor stocks in column 1 of occupancy list in establishing the rate of building itself.

f. When upper stories of an omnibus building with more than one ground floor stock are occupied by a boarding house or two or more dwellings, add 90 per cent. of the total of the charges for ground floor stocks in column 1 of occupancy list, to establish the rate of building itself.

External exposures, if any, should be figured as directed in Exposure Formulas.

The following classification applies only to towns of classes 4, 4½, 5 and 6:

CLASSIFICATION OF REMOVABILITY.

Contents of Mercantile Buildings.

Note: In all *unexposed* frame, iron-clad and brick-veneered buildings the building and contents take the same rate. When these buildings are *exposed* the following classification should be applied, and the ratios of the Exposure Load of ground floor contents compared with that of building, should be established by Contents Table, Exposure Formulas.

Removable.

Boots and Shoes.
Clothing.
Dry Goods.
General Stocks.
Gents' Furnishing Goods.
Groceries.
Hats and Caps.
Harness and Saddlery.
Jewelry.
Tailors' Stocks.

Semi-removable.

Agricultural Implements and Vehicles. (Not part of Lumber Yard Stocks.)
Bakery Stock, Furniture and Fixtures.
Barber Shop Furniture.
Books and Stationery.
Cigar and Tobacco Stocks.
Confectionery Stocks.
Dressmakers' Stocks.
Drug Stocks.
Furniture Stocks.
Hardware, Stoves and Tinware Stocks.
Hotel Furniture in two-story frame hotels, exclusively occupied as such.
Household Furniture.
Libraries—Private.
Music Stores.
Office Furniture.
Pawnbrokers' Stocks.
Photographers' Outfits.
Queensware Stocks.
Racket Stocks.
Restaurant Furniture, Fixtures and Supplies.
Saloon Stocks.
Second Hand Stocks.
Storage—all property put up in boxes, barrels, sacks, bales or packages for convenient handling.

Non-removable.

Bank and Saloon Furniture and Fixtures.
Bicycle Repair Shops.
Billiard Saloons.
Bowling Alleys.
Feed Store Stocks.
Lumber, Sash, Door and Blind Stocks and Building Materials.
Meat Shop, Stock, Furniture and Fixtures.
Millinery. (So classed on account of damageability.)
Plumbing Shops.
Post Office Furniture and Fixtures.
Printing Office Outfits.
Storage—all property in bulk, i. e., not put up in boxes, barrels, sacks, bales or packages for ready handling.
Store Fixtures.
Tin Shops.
All property not located on ground floor, unless part of a ground floor stock.

The contents of all non-mercantile buildings not classified above are treate as non-removable, excepting live and rolling stock in exposed barns, whic should be treated as removable.

BASIS RATES

(Frame, Iron-Clad or Brick-Veneered Buildings.)

ote—The following basis rates are computed from the standard of a one-
building in an unprotected town, the tables ranging from 90 to 250, as
ated by the heavy-face figures at the left of each table—for example, table
20 is computed upon the basis of $1.20 per $100 of insurance.
hen building exceeds three stories in height, increase the three-story
rate 10 per cent. for each additional story.
he proper basis rate table to use in each State should be established by

) Classes	1	2	3	4	4½	5	6
y	$0.61	$0.67	$0.71	$0.77	$0 82	$0.86	$0 90
ies	.64	.70	.75	.81	.86	.91	.95
	.68	.75	.79	.86	.92	.97	1.01

5 Classes	1	2	3	4	4½	5	6
y	$0.65	$0.70	$0.75	$0.82	$0.86	$0.91	$0.95
ies	.68	.74	.79	.86	.91	.96	1.00
	.73	.79	.84	.92	.97	1.02	1.06

) Classes	1	2	3	4	4½	5	6
y	$0.68	$0.74	$0.79	$0.86	$0.91	$0.96	$1.00
ies	.71	.78	.83	.90	.96	1.01	1.05
	.76	.83	.88	.96	1.02	1.08	1.12

5 Classes	1	2	3	4	4½	5	6
y	$0.71	$0.78	$0.83	$0.90	$0.96	$1.01	$1.05
ies	.75	.82	.87	.95	1.01	1.06	1.10
	.80	.87	.92	1.01	1.07	1.13	1.18

) Classes	1	2	3	4	4½	5	6
y	$0.75	$0.81	$0.87	$0.95	$1.00	$1.06	$1.10
ies	.78	.86	.91	.99	1 06	1.11	1.16
	.84	.91	.97	1.06	1.12	1.19	1.23

5 Classes	1	2	3	4	4½	5	6
y	$0.78	$0.85	$0 91	$0 99	$1.05	$1.10	$1.15
ies	.82	.90	.95	1.04	1.10	1.16	1.21
	.87	.95	1.01	1.10	1.17	1.24	1.29

) Classes	1	2	3	4	4½	5	6
y	$0 82	$0.89	$0.95	$1.03	$1.09	$1.15	$1.20
ies	.85	.94	1.00	1.08	1.15	1.21	1.26
	.91	1.00	1.06	1.15	1.22	1.30	1.34

5 Classes	1	2	3	4	4½	5	6
y	$0.85	$0.93	$0 99	$1.08	$1.14	$1.20	$1.25
ies	.89	.98	1.04	1.13	1.20	1.26	1.31
	.95	1.04	1.10	1.20	1.28	1.35	1.40

) Classes	1	2	3	4	4½	5	6
y	$0 88	$0.96	$1.03	$1.12	$1.18	$1.25	$1.30
ies	.92	1.01	1.08	1.17	1.25	1.31	1.37
	.99	1.08	1.14	1.25	1.33	1.40	1.46

5 Classes	1	2	3	4	4½	5	6
y	$0.92	$1 00	$1.07	$1.16	$1.23	$1.30	$1.35
ies	.96	1.05	1.12	1.22	1.30	1.36	1.42
	1.03	1.12	1.19	1.30	1.38	1.46	1.51

) Classes	1	2	3	4	4½	5	6
y	$0 95	$1.04	$1.11	$1.20	$1.27	$1.34	$1.40
ies	.99	1.09	1.16	1 26	1.34	1.41	1.47
	1.06	1.16	1.23	1.34	1.43	1.51	1.57

145 Classes	1	2	3	4	4½	5
1 story	$0.99	$1.07	$1.15	$1.25	$1.32	$1.39
2 stories	1.03	1.13	1.20	1.31	1 39	1.46
3 "	1.10	1.20	1.28	1.39	1.48	1.57

150 Classes	1	2	3	4	4½	5
1 story	$1.02	$1.11	$1.19	$1.29	$1.37	$1.44
2 stories	1.07	1.17	1.25	1.35	1.44	1 52
3 "	1.14	1.25	1.32	1.44	1.53	1 62

160 Classes	1	2	3	4	4½	5
1 story	$1.09	$1.18	$1.26	$1 38	$1.46	$1.54
2 stories	1.14	1.25	1.33	1.44	1.54	1.62
3 "	1.22	1.33	1.41	1.54	1.63	1.73

170 Classes	1	2	3	4	4½	5
1 story	$1.16	$1.26	$1.34	$1.46	$1.55	$1.63
2 stories	1.21	1.33	1.41	1.53	1.63	1.72
3 "	1.29	1.41	1.50	1.63	1.73	1.83

175 Classes	1	2	3	4	4½	5
1 story	$1.19	$1.30	$1.38	$1.51	$1.59	$1.68
2 stories	1.25	1 37	1.45	1.59	1.67	1.76
3 "	1.33	1.46	1.55	1.69	1.78	1.89

180 Classes	1	2	3	4	4½	5
1 story	$1.22	$1.33	$1.42	$1.55	$1.64	$1.73
2 stories	1.28	1.40	1.49	1.62	1.73	1,82
3 "	1.37	1.49	1.58	1.73	1.84	1.94

190 Classes	1	2	3	4	4½	5
1 story	$1.29	$1.41	$1.50	$1.63	$1.73	$1.82
2 stories	1.35	1.48	1.58	1.71	1.82	1.92
3 "	1.44	1.58	1.67	1.82	1.94	2.05

200 Classes	1	2	3	4	4½	5
1 story	$1.36	$1.48	$1.58	$1.72	$1.82	$1.92
2 stories	1.42	1.56	1.66	1.80	1.92	2.02
3 "	1.52	1.66	1.76	1.92	2.04	2.16

210 Classes	1	2	3	4	4½	5
1 story	$1.43	$1.55	$1 66	$1.81	$1.91	$2.02
2 stories	1.49	1.64	1.74	1 89	2.02	2.12
3 "	1.60	1.74	1.85	2.02	2.14	2.27

220 Classes	1	2	3	4	4½	5
1 story	$1.50	$1.62	$1.74	$1.90	$2.00	$2.12
2 stories	1.56	1.72	1.82	1.98	2.12	2.22
3 "	1.68	1.82	1.94	2.12	2.24	2.38

225 Classes	1	2	3	4	4½	5
1 story	$1.53	$1.67	$1.78	$1.94	$2.05	$2.16
2 stories	1.61	1.75	1.87	2.04	2.16	2 27
3 "	1.71	1.87	1.98	2.17	2.30	2.43

250 Classes	1	2	3	4	4½	5
1 story	$1.70	$1.85	$1.98	$2.15	$2.28	$2.40
2 stories	1.78	1.95	2.08	2.25	2.40	2.53
3 "	1.90	2.08	2.20	2.40	2.55	2.70

CHARGES AND CREDITS.

All charges and credits to be percentages of basis rate unless otherwise stated.

(FRAME TARIFF.)

1. ***Table of Area Charges.***
   - *a.* **Area charge should be applied to all buildings.**
   - *b.* **When the ground floor area exceeds the limits of the following table, the proper charge may be found from multiples of the areas provided for by adding the charges of two areas. Either method will produce substantially the same result.**
   - *c.* **When parts of a building differ in the number of floors, take the sum of the charges for each section, according to its area and number of floors. This charge is a percentage of the basis rate of the part containing the greatest number of stories.**
   - *d.* **Basement should not be counted as a floor unless occupied for active business purposes, or by hotel, apartment, lodging, or club house, for cooking, dining, laundering, storage or the generation of power, heat or light.**

When area is between any two figures in this column select the nearer of the two. When exactly half way between take the average of the two.

Square feet of ground floor area.	1 Floor.	2 Floors.	3 Floors.	4 Floors.	5 Floors.
1 M					
2 "			5%	7%	8%
3 "	3%	6%	8%	10%	12%
4 "	4%	8%	11%	14%	16%
5 "	5%	10%	14%	17%	20%
6 "	6%	11%	16%	20%	23%
7 "	7%	13%	19%	24%	27%
8 "	8%	15%	22%	27%	31%
9 "	9%	17%	24%	31%	35%
10 "	10%	19%	27%	34%	39%

2. ***Foundations.*** **If no foundations or posts or pillars, not enclosed, add.. 8%**
3. ***Chimneys and flues.***
   - *a.* **Brick, not built from ground, add.................................. 8%**
     For each additional increase charge 2%. (See note under *b.*)
   - *b.* **Tile or terra-cotta, or brick on edge, safely arranged and in good order, add....... ....15%**
     For each additional, charge 4%. (See note under 4.)

NOTE: If both *a* and *b* in same building, charge for *b* plus 2% for each *a*.

4. ***Stove-pipes.***
   - *a.* **Through floor, ceiling or partitions, safely arranged, add......8 %**
     For each additional, charge 2%.
   - *b.* **Through roof or side of buildings, safely arranged, add........20%**
     For each additional, increase charge one-fifth.
   - *c.* **Same as *b*, with approved patent ventilator. add...............15%**
     For each additional increase charge one-fifth.

NOTE: If through ceiling into cock-loft or concealed space, double charges, 3 *b*, 4 *a*, 4 *b* and 4 *c*.

(CREDITS.)

5. If frame building has metal or approved composition roof with or without iron-clad sides, deduct....................10%
7. If building is brick-veneered, with shingle roof or frame mansard, deduct 5%
8. If skeleton iron-clad or brick-veneered walls with metal or approved composition roof, deduct......................15%

Power Devices.

All charges for Motive Power, fixed or movable, should be made rom Table of Charges for Power Devices in Appendix.

LPHABETICAL LIST OF OCCUPANCIES

(*Frame Tariff.*)

When an item in alphabetical list is preceded by an asterisk, it indi-
es that the risk belongs to quick-burning class and is entitled to less
dit for fire department protection than ordinary risks. In such cases
basis rate should be increased by the following percentages and
ted as a new basis rate. (For further information see "General
narks Supplementary to Classification of Occupancy," page 23,
endix).

Under 1st class protection increase basis rate 20%.
Under 2nd class protection increase basis rate 15%.
Under 3rd class protection increase basis rate 10%.
Under 4th class protection increase basis rate 5%.
Under 4½ and 5 use basis rates of 6th class towns.

Labor: Additional Labor. When these words appear with an occu-
cy, their meaning is to be taken as indicated by note, page 14, ap-
dix.

a Benches for private repairs or auxiliary work should be charged for as follows, if not provided for in list:	
1. Metal work	20%
2. Woodwork	30%
3. Painting	30%
4. Painting, occasional	10%
b Over one day's supply of paints and oils kept in main building of industrial risks	20%
(When more than one occupancy in a building, charges *a* and *b* should be treated as cumulative.)	
c Consult After Charge, page 41, for remediable defects, faults of management, etc.	

	1	2
Academies in upper stories of Mercantile Buildings (see Schools).		
Advertising Novelties, stocks	50%	
Advertising Novelties.		
If leather, see Leather Sewing Risks; if cloth, see Sewing Risks; if metal, see Machine Shops; if wood, see Woodworking.		
Agricultural Implement Stocks (not part of Lumber Yard Stocks)	50%	
1. Labor (repairs) (C. 2)		
2. Portable forge (See Appendix).		
Armories (see Halls).		
Art Stocks and Artists' Materials	50%	
1. Labor—framing (C. 2)		
Athletic Goods (see Sporting Goods).		
Auction Stocks *b*	60%	20%

		1	2
8	**Automobile** Stocks.		
	"a" Electric, steam or gasoline machines (no gasoline on premises or in machines)	70%	30%
	"b" *Gasoline machines, with gasoline in machines only	90%	60%
	1. Labor (repairing), heat, etc. (C3½)		
	2. Charging with electricity only, not produced on premises	20%	
	(Above charge is cumulative with charge for power if produced on premises, but not cumulative with charges 3, 4, or 5.)		
	3. Charging with gasoline, gravity pressure	100%	
	4. Charging with gasoline, conveyed to building by hand	75%	
	5. Charging with gasoline conveyed to building by pump	50%	
	6. Storage of gasoline in building, not to exceed one barrel	50%	
	7. Storage of gasoline in building, not to exceed 10 gallons in approved metal can	20%	
	8. If premises used as a public garage	40%	
9	***Automobile** Garages: for storage and care of automobiles in use	100%	80
	(If repairs or charging, apply charges 1 to 7 inclusive, Automobile Stocks).		
9½	**Automobile** Supply Stock (no machines)	50%	
10	**Awning and Tent Making** (See Sewing Risks).		
21	**Bag** Factories, Paper (see Box Factories, Paper).		
22	**Bag** Factories, Textile (see Sewing Risks).		
23	**Bags** (leather) Manufacturing (see Leather Sewing Risks).		
24	**Bakery** (retail) not over 5 hands	50%	
	1. Furnaces with ovens, kettles, etc. (C. 2)		
25	**Bakeries** (wholesale), bread, cake and pies only, over 5 hands	70%	30
	1. Additional labor (C. 3)		
	2. Power (C. 3)		
	3. Furnaces with ovens or kettles (C. 3)		
25½	**Bakeries** (wholesale), crackers, cookies, etc., over 5 hands	80%	40
	1. Additional labor (C. 3½)		
	2. Power (C. 3½)		
	3. Furnaces with ovens or kettles (C. 3½)		
26	**Banks**	20%	
27	**Barber** Shops, small, no baths	20%	
	(If in upper stories of mercantile buildings, reduce above charge one-half.)		
	1. Hot water baths, unless heat is produced outside or by regular heating plant of building	20%	
28	**Barns** (see Stables).		
33	**Basket** and Willow-ware Stocks	60%	2
34	**Basket** making (hand)	70%	3
	(No sawing or splitting.)		
	1. Additional labor (C. 3½)		
	2. Power (C. 3½)		
35	**Beer** Depots	70%	3

b

	1	2
Bicycle Stocks	50%	
1. Labor, repairing, power, heat, etc. (C. 2)		
Billiard Saloons (no bar)	50%	
Blacksmith Shops, 1 forge	70%	30%
1. For each forge over one, 8% up to 80%.		
2. Additional labor (C. 2)		
3. Power (C. 2)		
Blacksmith and Wagon Shops, 1 forge	90%	60%
1. For each forge over one, 12% up to 120%.		
2. Additional labor (C. 4)		
3. Occasional Painting	10%	
4. Regular Painting	30%	
5. Trimming	30%	
6. Power (C. 4)		
Blind, Sash and Door Stocks (not connected with Lumber Yards)	60%	20%
1. Add for painting and glazing on small scale	20%	
2. Power sanding without approved blower, not over two machines	60%	
3. Power sanding as above with approved blower	20%	
If over 2 machines, see 616.		
4. Power (C. 3½)		
Boarding Houses in upper stories of mercantile buildings	20%	
When mercantile building has been abandoned to boarding house occupancy, add to basis rate	50%	
If transient guests kept, rate as hotel.		
Boarding Houses (private), rate by special schedule.		
Boarding Houses (laborers') in upper stories of mercantile buildings	50%	
For regular Laborers' Boarding Houses, or mercantile buildings that have been abandoned to this purpose, charge	70%	30%
Book and Stationery Stocks	50%	
Boot and Shoe Stocks	50%	
Boot Black Parlors	20%	
Bottle Storage	50%	
Bottling Works	50%	
1. Additional labor (C. 2)		
2. Power, heat, etc. (C. 2)		
If spirits are bottled (see Soda Water Factories).		
Bowling Alleys	50%	
Box Factories (cigar). No sanding or planing	70%	30%
1. Additional labor (C. 3½)		
2. Power (C. 3½)		
3. Furnaces (C. 3½)		
Box Factory (paper)	70%	30%
1. Additional labor (C. 3½)		
2. Power (C. 3½)		
3. Dry Rooms and Furnaces (C. 3½)		

		1
53	**Brand,** Stencil and Stamp Works (see Rubber Stamps).	
54	**Brass** Goods	50%
55	**Bric-a-Brac** and Curios (Stocks of)	60%
55½	***Broom** Corn Stored in Mercantile Buildings (not over 100 bales)	90%
56	***Broom** Corn Warehouses	120%
	1. Labor baling (C. 4½)	
	2. Power (C. 4½)	
57	***Broom** Factories	120%
	1. Additional labor, power, etc. (C. 4)	
	2. Bleaching oven inside or in frame outhouse less than 20 feet distant	60%
	3. Painting or varnishing handles	20%
58	**Broom** Makers (hand), not over 2 hands—small amount of material	70%
	1. Bleaching oven inside or in frame outhouse less than 20 feet distant	60%
59	***Brooms,** Warehouses	70%
60	**Brush** Factories	60%
	1. Additional labor (C. 3)	
	2. Power (C. 3)	
	3. Furnaces (C. 3)	
	4. Pitching	20%
	If woodwork, see 616 and 617.	
61	**Brush** Stocks	50%
62	**Builders'** Materials, Storage (Lime, Hair, Cement, etc.), not applicable when part of a retail lumber yard	60%
63	**Busheling** Shops (small)	50%
	If in upper stories of mercantile buildings, reduce above charge one-half.	
64	**Butcher** Shops. (No rendering or smoking in building)	50%
	1. Furnace (rendering) with kettle (C. 2)	
	2. Smoking meats, if not outside in detached brick outhouse or fireproof room, communicating through approved fire door, or in frame outhouse 20 feet distant	100%
	3. Same, in fire-proofed room in main building, communicating through approved fire door, or in patent metal smoker in main building (approved arrangement)	30%
	4. Sausage smoking in metal smoke box	10%
	5. Power (C. 2)	
65	**Butter,** Cheese and Egg Stocks	50%
	1. Butter churning, mixing and packing	10%
	2. Power (C. 2)	
	3. For candling by artificial other than electric light in metal lined room	10%
	4. For candling by artificial other than electric light in the open	30%
66	**Button** Factories (cloth)	60%
	1. Additional labor (C. 2)	
67	**Button** Factories (pearl)	70%
	1. Additional labor, power, etc. (C. 2)	

		1	2
77	**Cabinet and Carpenter Shops.** See 616 and 617.		
78	**Candy** Factories	70%	30%
	1. Additional labor (C. 3½)		
	2. Power and Heat (C. 3½)		
	3. Open lights in starch room	30%	
79	**Candy** Shops (see Confectionery).		
80	**Canning** Establishments	70%	30%
	1. Additional labor (C. 3)		
	2. Power (C. 3)		
	3 Furnaces and Kettles (C. 3)		
	4. If gasoline stored in building, not over one barrel	50%	
	5. If not over 10 gals. in approved metal can..	20%	
81	**Canned** Goods, Storage	50%	
82	**Carpet** Cleaning Establishments	70%	30%
	1. Additional labor (C. 3½)		
	2. Power (C. 3½)		
	3. Gasoline Cleaning	50%	
	4. Gasoline stored in building, not over 1 bbl.	50%	
	5. If not over 10 gals. in approved metal can.	20%	
83	**Carpet** Stocks	50%	
84	**Carpet** Weaving	50%	
	1. Additional labor (C. 2)		
	2. Power (C. 2)		
85	**Carriage** and Wagon Repositories	50%	
	1. Forge portable (see Appendix).		
	2. Repairing, if woodwork	30%	
	3. Painting (occasional)	20%	
	4. Trimming	20%	
	5. Power (C. 2)		
	(If over 5 hands, see Blacksmith and Wagon Shops).		
86	**Cement** (Building) on storage	50%	
87	**Chemists'** Laboratories (small) in upper stories of mercantile buildings	20%	
88	**China** Decorating (Painting only)	50%	
	In upper stories of mercantile buildings, above charge may be reduced one-half.		
	1. Ovens (C. 2)		
89	**China** Ware (see Queensware).		
90	**Chinese** Stores (miscellaneous)	60%	20%
91	**Churches** in Mercantile Buildings.		
	When the ground floor of a mercantile building has been abandoned to church purposes, add to basis rate 50%.		
92	**Cider** and Vinegar in barrels	50%	

93	**Cigar** Factories and (or) Cigar and Tobacco Stocks, not over 5 hands	50%
	(If in upper stories of mercantile building, if not over 5 hands, above charge may be reduced one-half.	
	1. Labor—cigar making (C. 2)	
	2. Sweat box, if any	20%
94	**Cleaning** and Dyeing Establishments	70%
	1. Additional labor (C. 3½)	
	2. Power, Heat, Dry Rooms, etc. (C. 3½)	
	3. Gasoline cleaning	50%
	4. Gasoline, stored on premises, not over 1 bbl.	50%
	5. If not over 10 gals. in approved can	20%
	If charges 3, 4 and (or) 5 apply, risk should be starred.	
95	**Cloak** Factories (see Sewing Risks).	
96	**Clocks,** Watches and Jewelry (see Jewelry).	
97	**Clothing** Factories (see Sewing Risks).	
98	**Clothing** Stocks	50%
99	**Clothing** Stocks (second hand)	60%
100	**Club** Buildings (in town)	50%
	1. Add for lodging	10%
	2. Add for cooking	20%
	3. Add for laundry (steam)	20%
101	**Club** Buildings (small country), golf, fishing, hunting, etc.	60%
102	**Club** Houses (large suburban), no lodging, restaurant or laundry	60%
	1. Add for lodging	10%
	2. Add for restaurant	20%
	3. Add for steam laundry	20%
103	**Club** Rooms (social, in upper stories of mercantile buildings), no restaurant or lodging, no charge.	
	1. Add for cooking	10%
104	**Coal** and Wood Yards	60%
	1. Power for Sawing (C. 2)	
105	**Coal** Offices (see Offices).	
106	**Cobblers'** Shops	20%
	If in upper stories of mercantile buildings reduce charge ½.	
107	**Coffee,** Tea and Spice Stocks	50%
108	**Cold** Storage Warehouses	70%
	1. Candling by artificial other than electric light in metal-lined room	10%
	2. Candling by artificial other than electric light in the open	30%
	3. Power (C. 2)	
	4. Ice Making, no charge.	
109	**Collar** Factories (leather) if moss or hair	70%
	1. Power, heat, additional labor, etc. (C. 3½)	
	If hay, straw, shucks, etc	80%
	1. Power, heat, additional labor, etc. (C. 4)	
110	**Commission** Houses with Storage Warerooms	50%
	1. Candling by artificial other than electric light in metal-lined room	10%
	2. Candling by artificial other than electric light in the open	30%
	3. If poultry killing and packing, not over 3 hands, charge labor, heat, etc. (C. 3). If over 3 hands, rate as Poultry Packing establishment.	

		1	2
111	**Confectionery** Stocks (no candy making)	50%	
	1. If candy making, labor (C. 2). No charge for 2 hands.		
	2. Power and heat (C. 2)		
112	**Cooper** Shops, see 616.		
113	**Cornice** Works	70%	30%
	1. Power, heat, additional labor, etc. (C. 2) (Small shops, not over 2 hands, rate as tin shops.)		
114	**Costumers'** Stocks (for hire or sale)	60%	20%
	1. Labor (sewers) (C. 3)		
	2. Power (C. 3)		
115	**Country** Stores	60%	20%
	(Embracing stores located at crossroads or railway stations, or otherwise so isolated that little or no help may be counted upon in discovering or extinguishing fire or in the removal of goods from burning building. Not applicable to towns with over 50 population.		
116	**Country** Store Stocks (see General Merchandise Stocks).		
117	**Cotton** Storage (in the absence of special schedule).		
	Not over 20 bales	60%	20%
	Not over 100 bales	80%	40%
	*Over 100 bales	90%	60%
	(When cotton is stored in same premises with a mercantile stock the above charges apply to entire stock, in lieu of the occupancy charge for stock itself.)		
118	**Cutlery** Stocks	50%	
	1. Labor (grinding) (C. 2)		
	2. Power (C. 2)		
129	**Dental** Depots	50%	
	(If in upper story of mercantile building reduce charge one-half.)		
130	**Dentists'** and Doctors' Offices (see Offices).		
131	**Depots,** Railway, (freight or country), not Terminal	70%	30%
132	**Depots** (passenger only)	50%	
	1. Add for restaurant	30%	

		1	2
133	**Draperies,** Stocks of	50%	
	If manufacturing (see Sewing Risks).		
134	**Dressmakers,** not over 5 hands	20%	
	(If in upper stories of mercantile building above charge may be waived.)		
135	**Dressmaking** Establishments, not over 10 hands	50%	
	(If in upper stories of mercantile building above charge may be reduced one-half.)		
	1. Additional labor (C. 2)		
136	**Dried** Fruit (Storage)	50%	
137	**Drill** Halls (see Halls).		
138	**Drug** Stores (retail)	60%	20%
	1. If paints and oils	10%	
	(No charge for dry paints or paints in cans).		
139	**Dry** Goods Stocks	50%	
140	**Dwellings,** Flats or Apartment Houses in upper stories of Mercantile Buildings, no charge.		
	When ground floor of a mercantile building has been abandoned to dwelling occupancy, add to basis rate	50%	
141	**Dyeing** and Cleaning Establishments (see Cleaning and Dyeing).		
152	**Egg** Storage	50%	
	1. For candling by artificial other than electric light in metal-lined room	10%	
	2. For candling by artificial other than electric light in the open	30%	
153	**Electrical** Supplies and Small Shops	50%	
	1. Labor, shop work (C. 2)		
	2. Power, furnaces (C. 2)		
154	**Embroideries,** Stocks of	50%	
	If manufacturing (see Sewing Risks).		
155	**Envelope** Manufacturing	70%	30
	1. Additional labor (C. 3)		
	2. Power (C. 3)		
156	**European** Hotels (see Hotels).		
157	**Express** Offices	50%	
168	**Flat** Occupancies in Mercantile Buildings (see Dwelling Occ.)		
169	**Feather** Duster Stocks	50%	
	1. Labor (C. 3)		
	2. Power and furnaces (C. 3)		
170	**Feathers** and Flowers (Artificial)	50%	

b

		1	2
71	**Feather** Stocks (Upholsterers) Sewing only, no cleaning or renovating.	50%	
	1. Labor (sewing) (C. 2)		
	2. Power (C. 2)		
'2	**Feather** Stocks (Upholsterers) With cleaning or renovating.	60%	20%
	1. Labor (C. 3)		
	2. Power and furnaces (C. 3) (If shoddy, moss, tow or excelsior is part of stock, see Upholstering Establishments, if labor is done; if not, charge for these materials by the scale for Feed Stores with hay.)		
2½	***Feed** Mills	120%	100%
	1. Add'l labor, power, etc. (C. 4½)		
3	**Feed** Stores, no hay or straw	50%	
4	**Feed** Stores, with not over 50 bales of hay or straw	60%	20%
5	**Feed** Stores, with not over 100 bales of hay or straw	80%	40%
6	***Feed** Stores, with not over one car load of hay or straw If over one car load, rate as Hay Warehouse.	90%	60%
	1. If power cleaning with Feed Store risks, not over 2 machines	25%	
	2. If power chopping or grinding, not over 2 machines with feed store risks If over 2 machines under either of above items, rate as Feed Mill.	30%	
	3. Power with 173 to 176 (C. 3½) or with 176 (C. 4)		
7	**Filters,** Stocks of, with setting up only	50%	
8	**Fire** Arms, Stocks of (see Sporting Goods).		
9	**Fire** Engine Houses, no stabling	20%	
	1. Lockup in building (iron cells)	20%	
	2. Wooden cells, (cumulative with charge 1)	50%	
	3. If stabling in building	10%	
0	**Fish** Stocks (cured)	50%	
1	**Fish** and Oyster Stocks (fresh)	50%	
2	**Fixtures,** Store and Bank. Charge building rate when insured with building. Charge stock rate when insured with stock, or specific.		
3	**Flour** in bags or barrels (no mixing)	50%	
	1. Add for not over 2 power machines for mixing or sifting	25%	
	2. Power (C. 3½)		
	3. If mixing and (or) sifting over 2 power machines	70%	30%
	a. Add'l labor, power, heat, etc. (C. 3½)		
4	**Florists'** Stocks	50%	
5	**Food** Stocks	50%	
5½	**Freight** Houses of Transportation Lines, Terminal (to be applied only on specific property of consignors or consignees) The following charges are cumulative with regular structural charges:	80%	40%
	1. If platform rests on piles and space beneath is not enclosed with spark proof wire netting or other approved enclosure (Cumulative with charge 2, page 11.)	10%	
	2. If wood floor not filled in with earth or cinders to floor line (Reduce charge one-half when so filled.)	10%	
	3. If heated by stoves outside of office	10%	
	4. If lighted by kerosene lamps outside of office.	10%	
	5. Gasoline torches or lamps	50%	
	6. Locomotives permitted in building	25%	
	7. No signs prohibiting smoking outside of office	5%	
	8. Tugs or steamers moored to dock when not in use.	30%	

b

		1	2
186	**Fruit** Stores	50%	
	1. Banana ripening (If steam or hot water heat, no charge.)	20%	
187	**Furnace** Stocks	50%	
	1. Labor, shop work (C. 2)		
	2. Power, heat, etc. (C. 2)		
188	**Furnishing** Goods (see Gents' Furnishing Goods)		
189	**Furniture** Stocks (new)	60%	20
	1. Add for repairs on small scale	10%	
	2. Add for upholstering on small scale	10%	
	3. Add for painting or varnishing on small scale	10%	
	If regular woodwork, see 516 and 517.		
190	**Furniture** Stocks, Second Hand (see Second Hand Furniture).		
191	**Furniture,** household, stored (see Household Furniture, stored).		
192	**Furs,** retail	50%	
	If manufacturing (see Fur Sewing Risks).		
193	**Fur** Sewing Risks	50%	
	1. Additional labor (C. 2)		
	2. Power, heat, etc. (C. 2)		

204	**Gambling** Houses	60%	20
	1. Add for cooking	20%	
204½	**Gambling** Rooms, in upper stories of mercantile buildings	20%	
	1. Add for cooking	20%	
205	**Gas** and Electric Fixtures, Stocks of	50%	
	1. Labor, shop work (C. 2)		
	2. If lacquering or plating	30%	
	3. Power, heat, etc. (C. 2)		
206	**General** Merchandise Stocks	50%	
207	**General** Storage Warehouse (public)	80%	40
208	**Gents'** Furnishing Goods	50%	
209	**Glass** Ware and Window Glass (storage)	50%	
	1. Labor, polishing, grinding or silvering (C. 2)		
	2. Labor, packing (C. 3)		
210	**Glove** Stocks	50%	
	If manufacturing see Leather Sewing, if Kid or Leather, and Sewing Risks, if Cloth.		
211	**Glucose** in barrels	50%	
212	**Glue,** Storage	50%	
213	**Granite** Ware (storage)	50%	
214	**Grease** Risks, general, not including large manufacturing establishments or Butcher Shops	70%	30
	1. If melting and (or) mixing by steam in main building or frame outhouse less than 20 feet distant	30%	
	2. If melting and (or) mixing by furnace kettles in main building or frame outhouse less than 20 feet distant	60%	
	3. Additional labor (C. 3½)		
	4. Power, furnaces, kettles, etc. (C. 3½)		

	1	2
Grocery Stocks (retail)	50%	
1. Egg candling by artificial other than electric light	10%	
2. Coffee Roasting on small scale	10%	
Grocery Stocks (wholesale)	60%	20%
Gun and Locksmith	50%	
1. Add for portable forge	10%	
Gymnasiums (see Halls).		
Hair Goods (human and artificial)	50%	
1. Labor, heat, etc. (C. 2)		
Halls (municipal) used only for City Offices and Council Meetings	20%	
(If in upper stories of mercantile buildings above charge may be waived.)		
1. If fire engine house with stabling in building,	10%	
2. Lockup with iron cells	20%	
3. Lockup with wooden cells	50%	
Halls, private, including society, lodge or club rooms or private dance halls, no cooking	10%	
(If in upper stories of mercantile buildings, above charge may be waived.)		
1. Add for cooking, if any	10%	
Halls, public or Labor Union, with or without boxed platform stage, no scenery	60%	
(If in upper stories of mercantile buildings, above charge may be reduced one-half.)		
1. Add for cooking	10%	
2. Heated by hot air furnace or stoves	5%	
(This charge applies only when building has no other occupancies).		
3. If boxed platform stage with small amount of fixed scenery or not over 3 shifts of sliding scenery	20%	
4. Same as No. 3, lighted by gas on stage or in dressing-rooms	5%	
5. Same as No. 3, with gas footlights	5%	
6. Same as No. 3, lighted by other than electric or gas on stage and in dressing rooms	10%	
7. Same as No. 3, with other than electric or gas footlights	15%	
8. Add for dressing rooms	15%	
9. If with inclosed platform stage and over three shifts of sliding scenery	20%	
10. Heated by hot air furnace or stoves	10%	
11. Same as No. 9, lighted by gas on stage or in dressing rooms	10%	
12. Same as No. 9, with gas footlights	10%	
13. Same as No. 9, lighted by other than electric or gas, on stage or in dressing rooms	20%	
14. Same as No. 9, with other than electric or gas footlights	30%	
15. Same as No. 9, with dressing rooms	15%	

NOTE: If with lifting as well as sliding scenery and (or) regular theatrical stage, see Theatres.

		1	2
232	**Hammock** and Net Weaving	50%	
	1. Additional labor (C. 2)		
	2. If pitching by approved steam heat	20%	
	3. If pitching by furnace or kettle in main building or in frame outhouse less than 20 feet distant	50%	
	4. Furnace, Kettles, etc. (C. 3½)		
233	**Hardware** and Tinware Stocks	50%	
	1. Labor, shop work (C. 2). No charge for 2 hands.		
	2. Power, furnaces (C. 2)		
	3. If paints and oils	10%	
	(No charge for dry paints or paints in cans.)		
234	**Harness** and Saddlery Stocks	50%	
	1. Labor (5 hands or under) no collar stuffing, no charge.		
	If over 5 hands, rate as Leather Sewing Risk if no collar stuffing, or as Collar Factory if collar stuffing.		
235	**Hat** Cleaning Shops	60%	
	1. Additional labor (C. 3)		
	2. Furnaces, dry rooms, etc. (C. 3)		
	3. If gasoline used	20%	
	4. If not over 10 gals. kept on premises in approved metal can	20%	
	5. If gasoline stored, not over 1 bbl	50%	
236	**Hat** Factories, felt, cloth and silk	60%	2
	1. Additional labor (C. 3)		
	2. Power, furnaces, dry rooms, etc. (C. 3)		
	3. Pouncing (no blowers)	20%	
	4. Singeing	20%	
237	**Hat** Factories (straw)	70%	3
	1. Additional labor (C. 3½)		
	2. Power, furnaces, dry rooms, etc. (C. 3½)		
239	***Hay** Barns or Warehouses and Presses	120%	10
	1. Labor (C. 4½)		
	2. Power (C. 4½)		
239 A	***Hemp** in mercantile buildings (unhackled), not over 100 bales	90%	6
239 B	***Hemp** warehouse (unhackled)	120%	10
239 C	**Hemp** in mercantile building (hackled), not over 100 bales	80%	4
239 D	***Hemp** warehouses (hackled)	90%	6
240	**Hides** and Skins, green or dry	50%	
241	**Hops** in Bales (storage)	60%	2
242	**Hosiery** and Underwear Stocks	50%	
243	**Hotels** (lodging only)	60%	2
	(No charge for hotel bar, barber shop, news or tobacco stand.)		
	1. Add for cooking	30%	
	2. Add for laundry (steam)	30%	
	Charges 1 and 2 apply unless in frame outhouse 20 feet distant.		
	Summer Resort Hotels add 50c to final rate as above.		
	In small towns ordinary dwellings, constructed as such, without hotel sign, bar or laundry for guests, used for the accommodation of travelers in the absence of a regular hotel	50%	
	(No charge for cooking.)		

	1	2
House Furnishing Stocks	50%	
Household Furniture Warehouses (for stored household goods)	90%	60%
Household Goods stored in Mercantile Buildings.		
Contents of not over 1 household, no charge.		
Contents of not over 3 households	70%	30%
If over 3 lots, see Household Furniture Warehouses.		
Ice Cream Factories	50%	
1. Additional labor (C. 2)		
2. Power, etc. (C. 2)		
Ice Cream Parlors	50%	
Ice Factories	50%	
1. Power (C. 2)		
2. Add'l labor (C. 2)		
If cold storage rate as Cold Storage W. H		
Ice Houses, small, private, insured apart from main building to which they belong	70%	30%
If within 20 feet of main building to which they belong increase rate of main building 20% of basis rate of ice house.		
India Rubber Goods	50%	
Ink (Printing) Manufacturing	70%	30%
(No oil boiling.)		
1. Additional labor (C. 3½)		
2. Power, furnaces, etc. (C. 3½)		
(*If oil boiling)	80%	40%
1. Additional labor (C. 4)		
2. Power, furnaces, etc. (C. 4)		
Ink (Writing) Manufacturing	60%	20%
1. Additional labor (C. 3)		
2. Furnaces, kettles, etc. (C. 3)		
Iron, heavy (stored)	50%	

		1	2
273	**Jails** or Lockups, with iron cells	60%	20%
	1. If wooden cells, add	40%	
	2. Stabling	10%	
274	**Japanese** Stores (see Chinese Stores).		
275	**Jewelry** Stock	50%	
276	**Justice** of the Peace Office	20%	
	(If in upper stories of mercantile buildings, above charge may be waived.)		
277	**Junk** Stocks, no rags or other inflammables	80%	40%
278	**Jute** in bales	50%	
288	**Knitting** Works (Woolens or Silks)	60%	20%
	1. Additional labor (C. 3)		
	2. Power, heat, etc. (C. 3)		
	Cotton, linens, etc.	70%	30%
	1. Additional labor (C. 3½)		
	2. Power, heat, etc. (C. 3½)		
	Where two or more materials are used, all charges should grade by that of highest combustibility.		
298	**Lamp,** Stocks	50%	
299	**Laundry** Offices (no laundering)	50%	
300	**Laundries** (hand), small	60%	20%
301	**Laundries** (steam)	80%	40%
	1. Additional labor (C. 2)		
	2. Dry room, according to arrangement, see Appendix.		
	3. Add for gasoline cleaning	20%	
	4. Add for gasoline stored in building, not over 1 bbl	50%	
	5. If not over 10 gals. in metal can	20%	
	6. Power (C. 2)		
302	**Leather** Stocks	50%	

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3	**Leather** Sewing and Cutting, embracing all risks where leather is sewed, cut or cemented (excepting cobblers, harness shops and collar factories).	50%	
	1. Additional labor, power, heat, etc. (C. 2)		
	NOTE: Sole or heel drying in metal or wooden boxes, charge as for dry heat boxes, page 22 Appendix.		
	2. Harness Oiling	5%	
	3. Harness Dipping	15%	
	4. Combustible cement that *does not require heating,* used under regular printed permit limited to one day's supply	20%	
	5. Combustible cement that *requires heating,* used under regular printed permit limited to one day's supply	100%	
	(Not cumulative with charge 4.)		
	6. Inking, dyeing or blacking with benzine, or other combustibles used for thinning, limited to one day's supply, charge as follows:		
	a. Dyeing or inking only	50%	
	(Charge *a* may be waived for dyeing of edges only.)		
	b. Dyeing, or inking and (or) drying unless done in a separate and detached building or fireproof room	100%	
	7. Wax Cups, heated by flame or Kit lamps not kept in metal boxes	10%	
	8. Heel or Edge Machines or other buffing or sanding machines with metal blower with outside exhaust	10%	
	9. If without blowers, with outside exhaust	50%	
	Increase charge 1/5 for each machine over 3 up to double the charge.		
	10. Wooden heel making	10%	
	11. Wooden last making (not over 5 hands)	25%	
	If over 5 hands charge for additional hands engaged in woodwork on scale of (C3½)		
	(Not cumulative with charge 10.)		
	12. No approved metal waste can for scrapings from cutting board	50%	
	13. If more than one day's supply of rubber or other cement, dye or volatile fluid combustibles kept in building, charge as follows:		
	a Not over 10 gals. in approved metal cans	20%	
	b Not over one barrel	50%	
	14. Collar making on small scale in Harness Factories, not over one day's supply of stuffing material in building	50%	
	If stuffing material over one day's supply, or over 5 stuffers, rate as Collar Factory.		
04	**Libraries** (circulating or public)	20%	
	(If in upper stories of mercantile buildings, above charge may be waived.)		
05	**Lime** on Storage	70%	80%
06	**Linens** (Stocks of)	50%	
07	**Liquors,** wholesale (no rectifying)	50%	
	1. Labor, rectifying (cold process) or bottling (C. 2)		
	2. Power, heat, etc. (C. 2)		
08	**Livery** Stables (see Stables).		
09	**Locksmiths** (see Gunsmiths).		
10	**Lodge Rooms** (see Halls, private).		

		1	2
311	**Lodging** Houses, no restaurant or laundry.......	50%	
	If over 20 rooms, rate as hotel.		
312	**Lodging** Houses (laborers') no restaurant or laundry	60%	20%
313	**Lodging** Houses (low-grade bed houses).........	100%	
314	**Lodging,** no restaurant or laundry, in upper stories of mercantile building:		
	1. Under 10 rooms..............................	10%	
	2. Under 20 rooms..............................	20%	
	3. If 20 rooms or over, rate as Hotel.		
	No charge for sleeping rooms of ground floor occupants or their clerks.		
325	**Macaroni** Manufacturing	60%	20
	1. Additional labor (C. 2)		
	2. Power, furnaces, dry rooms, etc. (C. 2)		
326	**Machinery** Stocks	50%	
327	**Machine** Shops.		
	a. Dry Stamping or turning, or drilling and boring, with soap solution in lieu of oil, no woodworking (C. 2)	60%	20
	b. Turning, drilling, boring, etc., with oils, no woodworking (C. 3).......................	70%	30
	1. Labor, power, heat, etc., with *a* (C. 2), with *b* (C. 3)		
	3. If forging, make regular charge from Appendix.		
	4. Painting, occasional	10%	
	5. Painting, regular, and (or) dipping........	30%	
	6. Dip Tank, with cover......................	10%	
	7. Dip Tank, without cover..................	20%	
	(Increase charges 6 or 7 one-fifth for each tank over one, up to double the charge)		
	NOTE: If dipping in naphtha or other volatile inflammables, or their compounds, double charges 6 or 7.		
	8. Metal buffing or polishing, with approved metal blower system, outside exhaust....	10%	
	(No charge for one small wheel.)		
	9. Same as 8, without approved metal blower system	50%	
	(Increase one-fifth for each machine over 3 up to double the charge. No charge for one small wheel for occasional use.)		
	10. Emery grinding, with approved blower system, in room without power woodwork, buffing, painting or dipping..............	5%	
	Double the charge if without approved metal blower system.		
	(No charge for one or two small wheels.)		
	11. Same as 10, in rooms with power woodworking, buffing, painting or dipping......	30%	
	Double the charge if without approved metal blower system.		
	(No charge for one or two small wheels.)		
	12. If woodworking, see Nos. 616 and 617.		

		1	2
9	**Mantels,** Stocks of	50%	
0	**Marble** Shops	50%	
	1. Add for power (C. 2)		
0½	**Markets** (public)	60%	20%
1	**Markets** (vegetable)	50%	
2	***Mattress** Factories (upholstered)	120%	100%
	1. Additional labor, power, etc. (C. 4)		
	2. Add for hand picker in building	50%	
	3. Add for power picker in building	100%	
	(Charges 2 and 3 for Picker may be reduced one-half if in a metal-lined room with steam jet.)		
3	**Mattress** Factories (wire), if woodwork	80%	40%
	1. Additional labor (C. 3½)		
	2. Power (C. 3½)		
4	**Mattress** Factories (wire), metal work only	60%	20%
	1. Additional labor (C. 2)		
	2. Power (C. 2)		
5	**Mattress** Material, Stocks, with tow, shoddy, moss, excelsior, etc.	80%	40%
	(*If over 100 bales.)		
6	**Meat** Shops. (See Butcher Shops.)		
7	**Men's** Furnishing Goods (see Gents' Furnishing Goods).		
8	**Merchant** Tailor Stocks (under 10 hands)	50%	
	(If over 10 hands, see Sewing Risks.)		
9	**Millinery** Parlors, small sample stocks only	20%	
	(If in upper stories of mercantile buildings, above charge may be waived.)		
0	**Millinery** Stocks (retail)	50%	
1	**Mill** Supplies	50%	
	1. Add for oils, if any	10%	
2	**Milk** Depots	50%	
3	**Mineral** Water Stocks	50%	
4	**Molasses** in barrels, storage	50%	
5	**Moving** Picture Theatres	70%	30%
6	**Music** Stores (no repairs)	50%	
	1. Labor (repairs) (C. 3)		
	2. Furnaces (C. 3)		
5	**Natatoriums**	50%	
6	**Newsdealers'** and Stationers' Stocks	50%	
	(No charge for occupancy of small newsstands in mercantile buildings.)		
7	**Notions**	60%	20%
8	**Nuts** (peanuts) without shelling and cleaning	50%	
9	**Nuts** (peanuts) with shelling and (or) cleaning	70%	30%
	1. Labor (C. 3)		
	2. Power (C. 3)		

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369	**Oakum** in bales	70%
370	**Office** Justice of the Peace (see Justice of the Peace).	
371	**Offices** of Professional Men, Insurance and Real Estate Agents, etc., on ground floor	20%
	(If in upper stories of mercantile buildings, no charge.)	
372	**Oil** Cloths, stocks, including linoleum	50%
373	***Oils**, heavy lubricating, vegetable, animal and other non-volatile	80%
	1. If mixing by steam in main building or frame outhouse less than 20 feet distant	30%
	2. If mixing by furnace kettles in main building or frame outhouse less than 20 feet distant	60%
	3. Furnace kettles, etc. (C. 4)	
374	***Oils**, general stocks and Petroleum or its products, of not less than Government standard.	120%
375	***Oils**, embracing Crude Petroleum or any of its products, not of U. S. standard, as gasoline, naphtha, benzine, etc.	200%
376	**Opera** Houses (see Theatres).	
377	**Opticians**	20%
	(If in upper stories of mercantile buildings, above charge may be waived.)	
378	**Oriental** Rug Stocks, Turkish, Persian, Japanese, etc.	50%
379	**Overall** Factories (see Sewing Risks).	
380	**Over** Gaiters, manufacturing (see Sewing Risks).	

390	**Paint** Stocks, dry colors or small unbroken package stocks	50%
391	**Paint** and Oil Stores, small retail	60%
	1. If mixing by hand or painting on premises.	30%
392	***Paints**, **Oils and Varnish**, large stocks	70%
	1. If oil drawing	30%
	2. If mixing by hand in main building or frame outhouse less than 20 feet distant.	30%
	3. If mixing by power in main building or frame outhouse less than 20 feet distant.	60%
	4. Labor (C. 3½)	
	5. Power and heat (C. 3½)	
	6. If grinding (see Paint Mills).	
	7. If open lights or fire heat in stock rooms.	100%
	8. If swinging electric lights not protected by wire guards	50%
	(Charges 7 and 8 not cumulative.)	

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	1	2
3 ***Paint** and Color Works (no naphtha used)	120%	100%
1. Additional labor (C. 4)		
2. Power, furnaces (C. 4)		
3. If open lights or fire heat in stock rooms, add	100%	
4. If swinging electric lights not protected by wire guards, add	50%	
(Charges 3 and 4 not cumulative.)		
4 ***Paint** and Color Works.		
Naphtha used, limited to one day's supply.	150%	150%
1. Additional labor (C. 4½)		
2. Power, furnaces, etc. (C. 4½)		
(See above, charges 3 and 4.)		
***Paint** and Color Works.		
With naphtha not limited to one day's supply	200%	200%
1. Additional labor (C. 5)		
2. Power, furnaces, etc. (C. 5)		
(See above, charges 3 and 4.)		
Paint Shops (house and sign)	70%	30%
1. If painting on premises....................	30%	
2. Additional labor (C. 3½).		
Paper Box Making (see Box Factories, paper).		
Paper, general stocks	50%	
If ruling, cutting or other processes.		
1. Labor (C. 2)		
2. Power (C. 2)		
Paper Stock (cuttings) baled, no sorting	60%	20%
Paper Stock (cuttings) with sorting and baling.	70%	30%
1. Labor and Power (C. 3½)		
Paper, storage	50%	
Paper (wall paper), Stocks	50%	
If Paints (see Paint and Oil Stores).		
Paste Manufacturing	60%	20%
1. Additional labor (C. 2)		
2. Power, furnaces (C. 2)		
Patent Medicine Stocks.		
If non-inflammable ingredients	50%	
If ointments or inflammable ingredients.....	60%	20%
Patent Medicine Factories, cold process, non-inflammable ingredients	60%	20%
1. Additional labor (C. 3)		
2. Power and Heat (C. 3)		
Pawnbrokers' Stocks (general)	60%	20%
Perfumery Manufacturing (cold process)	60%	20%
1. Additional labor (C. 3)		
2. Power and Heat (C. 3)		
Perfumery Stocks	50%	
Phonograph Stocks, including Talking Machines.	50%	
Photographers' Studios	50%	
(If in upper stories of mercantile buildings, above charge may be reduced one-half.)		
Photographers' Supply Stocks	50%	
No acids or chemicals kept outside of safe or vault.		
Photographers' Supply Stocks	60%	20%
Acids or chemicals not kept in safe or vault.		

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413	**Pickles** with or without bottling	50%	
	1. Additional labor (C. 2)		
414	**Pickle** Factories (pickling in brine and barreling only)	50%	
415	**Pickle** and Preserve Factories, output packed in glass and boxed on premises	70%	30%
	1. Additional labor (C. 3½)		
	2. Power, furnaces, etc. (C. 3½)		
416	**Picture** Frame Stores	60%	20%
	1. Labor (framing) (C. 3)		
417	**Picture Frame Factories, with finishing, joining, painting, dipping, whitening and gilding**	70%	30%
	1. Additional labor, power, heat, etc. (C. 3½)		
	2. If Dip Tanks or woodwork, see 616 and 617.		
418	**Picture** Mouldings, storage	60%	20%
419	**Pipe,** Nut and Bolt Cutting	60%	20%
	1. Additional labor (C. 1)		
	2. Power (C. 1)		
420	**Plated** Ware, Stocks	50%	
	If manufacturing—		
	1. Labor (C. 2)		
	2. Power (C. 2)		
	3. If electro-plating	20%	
421	**Plumbers'** and Steam Fitters' Supplies, Stocks	50%	
	1. Labor, shop work (C. 2)		
	2. Power and Heat (C. 2)		
422	**Pop** Factories (see Soda Water Factories).		
423	**Post** Offices	50%	
424	**Preserving** Establishments (see Pickle and Preserving Works).		
425	**Poultry** Killing and Packing Houses	80%	40%
	1. If feather drying, add	20%	
	2. Candling by artificial other than electric light in metal lined room	10%	
	3. Candling by artificial other than electric light in the open	30%	
425½	**Printing** (private) with office, mercantile or industrial occupancy, not over 1 press	10%	
	(Increase 1-5 for each press over one up to double above charge.)		
	1. Power, heat, etc., charge by combustibility of main occupancy.		
	(If large cylinder press, or over 6 small presses, rate under 427, charging for power, heat, etc., by combustibility of main occupancy with minimum of (C. 3½)		
426	**Printing** Offices.		
	1. Composing only	20%	
	2. Composing and (or) press work, hand or foot power, not over 3 presses	60%	
	3. Composing and (or) press work, with power (not over 3 presses) or newspaper establishments	70%	
	If in upper story of a mercantile building, above charges may be reduced one-half.		

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4. Stereotyping	10%	
5. Electrotyping	10%	
6. Additional labor (C. 3)		
7. Power and Furnaces (C. 3)		
(Furnace on linotype machine may be waived.)		
For Job Offices with over 3 presses, see 427.		
Printing, Job with over 3 presses or Printing and Book Binding Establishments	70%	30%
1. Additional labor (C. 3½)		
2. Power (C. 3½)		
3. Stereotyping	10%	
4. Electrotyping	10%	
5. Furnaces, glue pots, etc. (C. 3½)		
(Furnace on linotype machine may be waived.)		
Produce, general country, embracing apples, potatoes, onions, etc., cured meats, hides, wool, flour, grain, seeds in bags, cheese, butter, etc., but not hay, hemp, straw, tobacco, broom corn, cotton or other high combustibles, nor property in cold storage	50%	
Public Halls (see Halls).		
Queensware Stocks	50%	
1. Labor (packing) (C. 3)		
2. No bins for packing materials	10%	
Racket Stocks	60%	20%
Rag and Junk Storage	150%	150%
1. Add for sorting and baling	20%	
2. Add for cutting or dusting	50%	
Rags, Baled (washed) on storage, no assorting	70%	30%
Railway Supply Stocks (no waste or wooden goods)	50%	
Railway Supply Stocks (general, with waste and wooden goods)	60%	20%
Rattan Goods	60%	20%
Rattan Goods Factory	70%	30%
1. Additional labor (C. 3½)		
2. Power, furnaces, etc. (C. 3½)		
Rectifying Establishments (cold process)	60%	20%
1. Additional labor, heat, etc. (C. 3)		
Refrigerators (ice chests), Stocks of	50%	
Restaurants (lunch counters, no cooking except coffee making)	50%	
Restaurants	60%	20%

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461	**Roller** Polo Rinks (see Skating Rinks).	
462	**Roofing** Materials, felt, pitch, paper, etc.	70%
463	**Rope** and Cordage Stocks, heavy (no twine)	50%
464	**Rubber** Stamp Manufacturing, including brands and stencils	50%
	1. Additional labor (C. 2)	
	2. Power, furnaces, etc. (C. 2)	
465	**Rugs,** Stocks of	50%
475	**Safes,** iron, Stocks of	50%
	1. Labor, repairing (C. 2)	
476	**Sail** and Rigging Lofts	50%
	If sewing—see Sewing Risks.	
477	**Salvation** Army Meeting Rooms (see Schools).	
478	**Saloons,** drinking	50%
	(No charge for billiards or bowling.)	
	1. If small restaurant, add	10%
	(If large restaurant, see Restaurants.)	
479	**Salt** on Storage	50%
480	**Saltpeter** Storage	80%
481	**Sanitariums** (private)	50%
482	**Scales** and (or) Pumps, Stocks of	50%
	1. Labor (repairs) (C. 2)	
	2. Power (C. 2)	
483	**Scenery** Storage	80%
484	**Schools** or Salvation Army Meeting Rooms in upper stories of mercantile buildings	10%
	(Single rooms used as studios by teachers of music, etc., no charge.)	
	When the ground floor of a mercantile building has been abandoned to School or Salvation Army Barracks, add to basis rate	50%
485	**School** Supply Stocks	60%
486	**Second-hand** Clothing Stocks	60%
487	**Second-hand** Furniture	70%
	1. If repairs, on small scale	10%
	2. If upholstering, on small scale	10%
	3. If painting and varnishing, occasional	10%
	For regular woodwork, see 516.	
488	**Seeds,** Flax, Hemp, Beans and other field seeds (on storage)	50%
	1. Labor (cleaning by hand) (C. 2)	
	2. Cleaning by power, not over 2 machines	25%
	a. Power (C. 3½)	
	If over 2 power cleaners	70%
	a. Additional labor, power, etc. (C. 3½)	
489	**Seed** Stores	50%

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490	**Sewing** Machine Stocks, no repairs	50%	
	1. Labor (repairing) (C. 2)		
	2. Power, heat, etc. (C. 2)		
491	**Sewing** Risks, embracing all risks where cutting and (or) sewing is done by hand or sewing machines on textile fabrics, including awnings, tents, flags, bags, tarpaulins, garments, etc., excepting Milliners, Dressmakers and Tailors, which see:		
	a. Woolens	50%	
	b. Silks	50%	
	c. Linens, Cottons and other vegetable fabrics	60%	20%
	d. Shoddy, slop-shop goods or cheap dyed cottons (overalls, etc.)	70%	30%
	Note: When two or more kinds of above are used, the graded charges that follow should be made by the grade of highest combustibility.		
	1. Additional labor should be charged as follows:		
	a. Cutting only, classes a and b (C. 1): class c (C. 2): class d (C. 3)		
	b. Cutting and making classes a and b (C. 2): class c (C. 3): class d (C. 3½)		
	2. Power, heat, etc. classes a and b (C. 2): class c (C. 3): class d (C. 3½)		
	3. If Laundering (steam)	20%	
	(This charge in addition to charge under No. 2 for laundry Dry Room.)		
	4. If Dyeing	20%	
	5. If gasoline cleaning	20%	
	6. Gasoline kept in building not over 10 gallons in metal can	20%	
	7. Gasoline kept in building not over one barrel	50%	
	8. Painting, varnishing, tarring or oiling on premises, not in a separate room with approved cut off	100%	
	9. Storage of 2d hand awnings	100%	
	(If Leather Sewing (see Leather Sewing Risks.)		
492	**Ship** Chandlers' Stock	60%	20%
	1. If oils not kept in vault, add	10%	
	2. Labor and Power (C. 3)		
	3. Picker, hand	50%	
	4. Picker, power	100%	
	(Charges 3 and 4 may be reduced one-half if in a metal lined room with steam jet.)		
493	**Shirt** and Shirt Waist Factories (see Sewing Risks).		
494	**Shirts**, Collars and Cuffs, Stocks	50%	
495	**Shoe** Factories (see Leather Sewing Risks).		
496	**Shoemakers'** Shops (see Cobblers' Shops).		
497	**Shooting** Galleries	50%	
498	**Show** Cases, Stocks of	50%	
499	**Sign** Manufacturing (glass)	60%	20%
	1. Additional labor (C. 2)		
	2. Power, heat, etc. (C. 2)		
500	**Sign** Manufacturing (Metal)	60%	20%
	1. Additional labor (C. 2)		
	2. Power, heat, etc. (C. 2)		
501	**Sign** Painters (see Paint Shops).		

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502	**Silk** Goods	50%
503	**Silverware**	50%
504	**Skating** or Roller Polo Rinks	90%
	(When halls or mercantile buildings are so occupied, above charge may be reduced one-half. Halls rented for occasional skating should be rated as halls.)	
505	**Sleeping** Rooms (see Lodging Rooms).	
506	**Soap** Stocks	50%
507	**Soap** Factories, Toilet, cold processes only	70%
	1. Additional labor (C. 3)	
	2. Power, heat, etc. (C. 3)	
508	***Soap** Factories	100%
	1. Additional labor (C. 4)	
	2. Power, heat, etc. (C. 4)	
	3. If candle making	100%
509	**Soda** Water Factories	60%
	1. Additional labor (C. 2)	
	2. Power (C. 2)	
510	**Sporting** Goods, Fire Arms, etc.	50%
510½	**Stables,** small private, in mercantile buildings..	10%
511	**Stables,** private, rate by Dwelling House schedule.	
511A	**Stables** of business firms for private delivery	50%
511B	***Stables,** bus, express, transfer, breeding, dairy, feed, stock, veterinary and shipping	70%
511C	***Stables,** hotel	90%
511D	***Stables,** livery, boarding and sale	100%
	1. If used for storage, repair or charging of automobiles, apply charges under No. 9.	
512	**Starch** storage	50%
513	**Statuary** and High Art Stocks	50%
514	**Steam** Fitters (see Plumbers).	
515	**Stone** Cutting (building stone)	50%
	1. Additional labor (C. 2)	
516	**Stone** Cutting and Sawing (power)	60%
	1. Additional labor (C. 2)	
	2. Power (C. 2)	
517	**Stoves** and Stove Castings (warehouse)	50%
518	**Stove** and Tinware Stocks	50%
	1. Add for Shop Work	10%
	2. If blacking with benzine	10%
	3. Benzine in building, not over 10 gallons in metal can	10%
519	**Strawboard,** warehouses	50%
520	**Straw** Goods Stocks	60%
521	**Studios,** Teachers', music, elocution, etc. (see Offices).	
522	**Suspender** Factories (see Sewing or Knitting Risks, according to work done).	
533	**Tailor** Shops (small), no stock, not over 10 hands.	50%
	(If in upper story of mercantile building, reduce above charge one-half.	
	1. If gasoline cleaning	10%
	If over 10 hands (see Sewing Risks).	
534	**Tallow,** Grease and Wax Mixing (see Grease Risks).	
535	**Tarpaulin,** manufacturing (see Sewing Risks).	
536	**Tea,** Coffee and Spice Stocks (see Coffee, etc.)	
537	**Telegraph** Offices (small, 1 or 2 operators)	20%
	(If in upper stories of mercantile buildings, no charge.)	
538	**Telegraph** Supply Stocks	50%

	1	2
Telephone Offices	20%	
(If in upper stories of mercantile buildings, no charge.)		
Switchboards take rate 25 cents higher than other contents which should class as non-removable.		
Tent Making (see Sewing Risks).		
***Theatres** or Opera Houses, with lifting and sliding scenery and (or) regular theatrical stage	100%	80%
1. Lighted by gas on stage or in dressing rooms	15%	
2. Gas footlights	15%	
3. Lighted by other than electric or gas on stage or in dressing rooms	30%	
4. Other than electric or gas footlights	50%	
5. Heated by hot air furnace or stoves	20%	
6. Dressing rooms	25%	
For regular theatre or opera houses in cities of 10,000 or over, use special Theatre Schedule.		
Tile, encaustic, mosaic and marble, Stocks of..	50%	
Tile Pipe (drainage and chimney) Storage	50%	
Tin Can Factories	60%	20%
1. Additional labor (C. 2)		
2. Power, heat, etc. (C. 2)		
For other charges see machine shops.		
Tinware Stocks	50%	
1. Labor, shop work (C. 2)		
2. Power, furnaces, etc. (C. 2)		
Tobacco Factories, (fine cut)	90%	60%
1. Additional labor (C. 4)		
2. Power, heat, etc. (C. 4)		
Tobacco (snuff) Manufactories	80%	40%
1. Additional labor (C. 3½)		
2. Power, heat, etc. (C. 3½)		
Tobacco Warehouses	60%	20%
1. Add for handling or sorting	20%	
(To be used in States having no special schedule.)		
Town Halls (see Halls, municipal).		
Toys and Notions	60%	20%
Trunk and Valise Stocks	50%	
1. If setting up or repairing on small scale, no woodwork, painting, varnishing or oiling..	10%	
2. Trimming	20%	
If over 2 hands, see Trunk Factories.		
Trunk and Valise Factories, strictly leather, (see Leather Sewing Risks).		
Trunk Factories with woodwork, see 616 and 617.		
Twine and Cordage Stocks	60%	20%
(See also Rope Stocks, heavy.)		

b

		1	2
556	**Type** Foundries	70%	30%
	1. Additional labor (C. 3)		
	2. Power, furnaces, etc. (C. 3)		
557	**Typewriter** Stocks and Supplies	50%	
568	**Umbrella** Stocks	50%	
	1. Labor, repairs (C. 2)		
569	**Undertaking** Establishments	50%	
	1. Labor on box work, if any (hand)	10%	
570	**Upholsterers'** Stocks (no moss, tow or excelsior)	50%	
	If moss, tow, excelsior, etc., charge by scale for Feed Stores, with hay.		
571	**Upholstering** or Furniture Repair Shops (small)	80%	40%
	1. Additional labor (C. 3½)		
	2. Varnishing or painting, occasional	10%	
	3. Varnishing or painting, regular	30%	
572	***Upholstering** Establishments, using moss, tow, excelsior or other like inflammables	120%	100%
	1. Additional labor (C. 4)		
	2. Picker (hand)	50%	
	3. Picker (power)	100%	
	4. Power (C. 4)		
	Charge for Picker may be reduced one-half if in a metal-lined room with approved steam jet.		

		1	2
582	**Vacant** Buildings (incomplete or undergoing repairs) (see Builder's Risks).		
	If temporarily vacant should, as a rule, keep the rate of last occupancy. In no event should charge be less than 50% of basis rate for each vacated occupancy on ground floor, nor less than one-half the total charge for last occupancy.		
583	***Varnish** Factories, Boiling and Chimney House	200%	200%
	1. Additional labor (C. 5)		
	a. *Thinning and Mixing House with benzine or naphtha	150%	150%
	2. Additional labor (C. 4½)		
	b. * Thinning and Mixing House with Turpentine	120%	100%
	3. Additional labor (C. 4)		
	4. If open lights or fire heat in either of above, add	100%	
	5. Swinging electric lights not protected by wire guards, in either of above, add	50%	
	(Not cumulative with charge for open lights.)		
	c. * Storage House for varnish	70%	30%
	d. Storage House for gum	50%	
585	***Varnish** Stocks	70%	30%
	1. Mixing by hand in main building or frame outhouse less than 20 feet distant	30%	
	2. Mixing by power in main building or frame outhouse less than 20 feet distant	60%	
	3. Labor and power (C. 3½)		
	4. Open lights or fire heat in stock rooms	100%	
	5. Swinging electric lights not protected by wire guards	50%	
	(Not cumulative with charge 4.)		
	6. Varnish drawing	30%	
	(Not cumulative with 1 or 2.)		
586	***Varnish** Warehouse (bulk), stored exclusively in approved steel or iron tanks	60%	20%
587	**Vegetables** (see Markets)		
588	**Veneer** Stocks	60%	20%
589	**Vinegar** and Cider Stocks (see Cider and Vinegar).		
590	**Vinegar** Factories, cider vinegar only	70%	30%
	1. Additional labor (C. 3)		
	2. Power, heat, etc. (C. 3)		
591	**Vinegar** Factories	120%	100%
	1. Additional labor (C. 3½)		
	2. Power, heat, etc. (C. 3½)		

		1	2
600	**Wagon** Repositories (see Carriage and Wagon Repositories).		
601	**Wall** Paper Stocks (see Paper, wall).		
602	**Warehouses** (see General Storage Warehouses).		
602½	**Warehouses** (private) for surplus stocks.		
	Reduce the total of percentage charges in columns 1 and 2 for occupancy of like character ten points, and if no fire in building apply credit 16, page 41.		
603	**Watch** and Clock Stocks (see Jewelry).		
604	**Waterworks** Pumping Stations	50%	
	1. Power (C. 2)		
605	**Wheelwrights** (see Blacksmith and Wagon Shops).		
606	**Whiskey** (see Liquors, wholesale).		
607	**Willow** Ware Making (see Basket Making).		
608	**Willow** Ware Stocks	60%	2
609	**Window** Glass (see Glass).		
610	**Window** Shade (Cloth) Manufacturing	80%	4
	1. Additional labor (C. 4)		
	2. Power, heat, etc. (C. 4)		
	3. Refinishing, no benzine	50%	
	4. Cleaning with benzine	100%	
	5. Not over 10 gals. benzine in approved metal can	20%	
	6. Not over 1 bbl. benzine stored on premises	50%	
611	**Wines** and Liquors (see Liquors).		
612	**Wire** Stocks and Wire Goods	50%	
613	**Wire** Workers	50%	
	1. Additional labor (C. 2)		
	2. Power, heat, etc. (C. 2)		
614	**Wood** Mantles (see Mantles).		
615	***Woodenware** Stocks	70%	3
616	**Woodworking,** not connected with other industrial processes, nor otherwise provided for in Alphabetical List.		
	a. Woodworking, hand and (or) power, no power machines except saws, boring machines and (or) nailers, but not including carpenter, cabinet, cooper, upholstering, or pattern shops (C. 3½)	70%	3
	b. Carpenter, cabinet, cooper or pattern shops (star if with power machines except saws, boring machines and (or) nailers), with not over 2 power woodworking machines (C. 4)	100%	8
	*c.**Same as *b,* with more than two power woodworking machines (except saws, boring machines and (or) nailers) provided with approved metal blower system (C. 4)	100%	8
	*d.**Same as *c,* without approved metal blower system (C. 4½)	120%	10
	1. Additional labor, power, heat, etc., according to combustibility as above.		
	NOTE: In cooperage works, open fireplace and each patent metal barrel heater should be charged for as an independent furnace.		
	2. Occasional painting and (or) varnishing	20%	
	3. Painting, varnishing and (or) dipping (regular)	50%	
	4. Dip Tank, with cover, cumulative with charge 3	20%	

	1	2
5. Dip Tank, without cover, cumulative with charge 3	40%	
Note: If tank contains naphtha or other like combustibles or their compounds, double charge 4 or 5.		
Increase charge one-fifth for each tank over 1 up to double the total charge.		
6. If open heat devices or lights in room with power woodworking and (or) painting or dipping	50%	
7. Shavings vault, in main building.		
(The following apply only to occupancy items *c* and *d.*)		
a. Vault, brick, arched or with parapetted fire walls through roof, cut off by approved fire door with automatic cut-off in metal duct	10%	
b. Vault, brick, not arched or parapetted through roof, with approved fire door and automatic cut-off in metal duct	30%	
c. Vault, brick, not arched or parapetted through roof and without approved fire door or automatic cut-off in duct	50%	
d. Vault, frame, in main building, or no vault, and wood refuse used for fuel, without approved automatic feed and cut-off	100%	
e. If no approved steam jet with control valve outside of vault, increase any of above charges one-third.		
Woodworking, connected with other industrial processes, unless otherwise provided for in Occupancy List.		
1. When woodworking benches for private repairs or auxiliary work are found, occupancy should be rated on its own combustibility, as stated in Alphabetical List, and regular charge of 30% applied (see p. 13 *a.*)		
2. When woodworking, in excess of No. 1, is found, with occupancies of a combustibility that grades lower than the preceding classification, all hazards should be charged for upon the scale of woodworking found in item 616, *a* to *d*.		
3. When woodworking, in excess of No. 1, is found, with occupancies of a combustibility equal to or higher than that of woodworking as stated, all charges should be based upon the combustibility of the regular occupancy instead of upon that of woodworking.		
4. If forging is found in same room with woodworking, After Charge should be applied at discretion for unsafe conditions.		
5. *Painting and (or) Dipping.*		
Rooms or divisions with standard cut-off, occupied solely for painting and (or) dipping wooden goods, or for drying same by natural air, should grade as follows:		
a. No naphtha or like volatile combustibles or their compounds used (C. 3½)	70%	30%
b. Naphtha or other like volatile combustibles or their compounds used (C. 4)	80%	40%
1. Labor in section *a* (C. 3½), *b* (C. 4)		
2. Dip Tank, with cover	20%	
3. Dip Tank, without cover	40%	
Note: If tank contains naphtha or other like combustibles or their compounds, double charge 2 or 3.		
Increase one-fifth for each tank over one, up to double the charge.		
4. If open heat devices or lights in room	50%	

CREDITS.

(*For Protective Features.*)

The following credits are percentages of the occupied building rate established by preceding charges and credits.

12 Standpipe and Hose, for approved arrangement on each floor, deduct 5%
(Total credit not to exceed 10 cents.)

13 Casks and Pails of Water.
a. In industrial risks, if with approved cask and five pails in good order, or in lieu, one approved chemical extinguisher for each 2,000 square feet of floor area.. 5%
(Total credit not to exceed 10 cents.)
b. For mercantile risks, above credit should be extended for chemical extinguishers only.

14 ***Watchman*** inside building, with approved watch-clock, deduct 5%
(Total credit not to exceed 10 cents.)

15 ***Watchman*** inside building, reporting to A.D.T. or other approved system reporting to central station.................... 10%
Not cumulative with credit 14. Total credit not to exceed 20 cents.

16 Automatic Fire Alarm System connected with paid fire department (approved) 10%
Total credit not to exceed 20 cents.
When found with watchman reduce credits 14 and 15 and the limits thereunder one-half.

7 If building is heated exclusively by hot water or steam from outside source, or no heat, deduct...................... 5%
(This credit not to apply when building contains stationary heat device of any kind.)

8 If ceilings and walls covered with approved whitewash or fireproof paint 2%

AFTER CHARGES.

The following punitive charges for defects that are remediable at small expense, should be applied to building and contents after the Final Rate has been established, in order that correction of defect may not make a revision of rates necessary. Unlike other charges and credits, they are not percentages of Basis Rate, but fixed amounts for each $100 at risk.

Heating or Power (unsafe), including arrangement or condition of flues, stovepipes, furnaces, stoves, boilers, engines, motors, etc., dangerous proximity to woodwork, heating by stoves outside of office in warehouse risks where inflammables are stored, etc., in addition to charge, if any, for safe arrangement............20c to $1.50

Lighting (unsafe), including arrangement or condition of lights, open lights in show windows or in warehouses outside of office where inflammables are stored, etc., in addition to charge, if any, for safe arrangement..20c to $1.50

General Untidiness or Carelessness, including any objectionable feature of management or condition of premises, not charged for in preceding table..........20c to $1.50

NOTE: The following charges should be made for the hazards most commonly found under this head.

a. For absence of metal lockers with self-closing doors, in industrial risks where workmen's clothes are liable to be soiled with grease or paint	5c to 10c
b. No approved metal waste cans in industrial risks where oily waste, rags or other refuse are found	5c to 10c
c. No approved drip-cups under shaft-bearings, unless floor is non-combustible	5c to 10c
d. No approved drip-pans under printing presses, or drills, lathes or boring machines in metal workers, unless floor is non-combustible	5c to 10c
e. No signs prohibiting smoking in industrial risks grading higher combustibility than C. 3	5c to 10c
f. Flexible rubber tubes, used with natural gas	5c to 25c

Taxes, Municipal or State, charge according to circumstance.

b

EXAMPLES

Note: In the following examples the basis rates are selected from Basis Ra[illegible] Table No. 100 for sixth class protection:

EXAMPLE NO. 1.

(Single Occupancy.)

One story frame iron-clad building with metal roof, without basement, 20 x 50 feet, occupied as a second-hand clothing store.

	Charges.	Credits.	
Basis Rate—one-story			$1 [illegible]
Area, no charge.			
Brick flue not built from ground	8%		
Metal roof		10%	
Second-hand clothing	60%+20%—80%		
	88% — 10%—78%		.[illegible]
Rate of Building and contents			$1.[illegible]

EXAMPLE NO. 2.

(Multiple occupancy building with one ground floor stock.)

Two story and basement frame building with shingle roof, 25 x 80 feet, occupied as follows:

Basement: Carpenter shop, two hands.
Ground floor: Grocery.
2nd story: Photograph gallery and offices.

Basis rate—two-story		$1.05
Area 2000 ft., 3 floors	5%	
Flue (one) charge 3 *a*	8%	
Carpenter shop	100%+80%	
Grocery	50%	
Egg candling	10%	
Photograph gallery (half charge)	25%	
	198%+80%—278%	2.92
Rate of building and contents		$3.97

EXAMPLE NO. 3.

(Multiple occupancy building with one ground floor stock.)

Two story and basement frame building with shingle roof, 20 x 40 feet, occupied as follows:

Basement: Barber shop.
Ground floor: Grocery.
2d story: Hall (society).

Basis rate—two-story		$1.05
Area, no charge.		
Barber shop	20%	
Grocery	50%	
Hall (society), no charge.		
	70%	.74
Rate of building and contents		$1.79

EXAMPLE NO. 4.

(Multiple occupancy building with more than one ground floor stock.)

Two-story frame building with shingle roof, 40x80 feet, occupied as follows:

Ground floor: Drug store and Grocery.

2nd story: Printing and offices, gaso. eng. standard, not enclosed.

Basis rate—two-story			$1.05
Area, 40x80—3200, 2 floors		6%	
Flues, tile (2) 15%+4%		19%	
Drug stock	60%+20%		
Grocery	50%		
Printing (half charge)	35%		
Gaso. engine (in enclosed room) 25%×60%	15%		
	160%+20%—180%		
		205%—	2.15
Rate of building and contents			$3.20

No charge is made for offices in second story.

EXAMPLE NO. 5.

(Frame hotel with four ground floor stocks.)

Building, two-story frame with shingle roof, total area 4,500 feet, second story occupied as hotel; Ground floor occupied as follows: Drugs, Men's Furnishing Goods, Clothing, Dry Goods.

Basis rate—two-story				$1.05
Area, 4500 feet (2 floors)		9%		
One stovepipe through partition		8%		
Hotel occupancy		60%+20%		
Cooking		30%		
Ground floor stocks:				
1. Clothing	50%			
2. Drugs	60%		+20%	
3. Men's Furnishing Goods	50%			
4. Dry Goods	50%			
	210%×80%—168%			
		275%+20%—295%—		3.10
Rate of building and contents				$4.15

(Ground floor contents.)

Note: The charge for drugs in column 2 being the same as for hotel occupancy, it is immaterial which enters into the rate.

The risks shown in the preceding examples will appear again in examples in Exposure Formulas.

EXPOSURE FORMULAS.

NATION OF GENERAL EXPOSURE TABLE.

al Exposures are classified under three heads:

ated Exposure, consisting of the proportion of its own hazard a risk ward exposed risks.

rbed Exposure, consisting of the proportion of radiated hazard ab- n exposed risk.

smitted Exposure, or the proportion of the hazard a risk absorbs de, that is transmitted by it to a risk on the other side.

he above classification, it is proper to bear in mind,

at every exposing risk radiates some ratio of its own hazard towards ks.

hat every exposed risk absorbs some ratio of this radiated exposure.

hat every risk transmits some ratio of the hazard it absorbs.

hat radiated, absorbed and transmitted exposure are all modified by clear space and fire department protection.

of the numerous ratios and *ratios of ratios* found in the problem of exposures, the necessity for some fixed standard of comparison is use a standard is the first essential in all measurement—it is equally as ratios are to be measured the standard must be a ratio and not a Again, if we view exposure from the standpoint of cause and effect, t that radiated exposure is to be taken as cause; hence it is necessary me ratio of the hazard of the exposing risk as a standard.

ting any standard for measurement, it is proper to choose that which nerally available and most free from change. These qualities are e greatest degree, perhaps, in the exposure of frame buildings to dings. In existing tariffs, there is substantial agreement in granting e building transmits all the exposure radiated towards it by other frames, and while there is a considerable diversity in the ratio of posure in the several tariffs, they approach nearer to uniformity in han in any other feature of exposure. An examination of different s shows a range of exposure charge in unprotected frame rows from third to one-half the hazard of the exposing risk. The average of all roximates closely to 40 per cent., while under the different grades of this ratio decreases in proportion to the protection.

ardly be disputed that, under like protection, like buildings radiate of their own hazard, and if this be true the standard of radiated ex- er any given grade of municipal protection should be the same every- ce all tariffs should agree in the adoption of a common standard. r of policy, however, in order to avoid wide deviations from existing nay be deemed advisable to bring about this uniformity gradually r to leave room for choice, the following alternative standards are with the recommendation that the middle column be used in all re it does not bring about too radical a departure from existing rates. should not be applied in states where basis rate of mercantile risks $2.00.

	ALTERNATIVE STANDARDS.		
	1	2	3
5th and 6th class towns	50%	40 %	33⅓% (⅓
4½ and 4th class towns....................	40%	33⅓% (⅓)	30 %
1st, 2nd and 3rd class towns..............	30%	30 %	30 %

In the following table, the figures in heavy-face type are in every case de mal ratios of the standard of radiated exposure, whatever it may be, and sh how many tenths of the standard constitute the absorbed exposure to b charged to the exposed risk when it stands within ten feet of the exposing risk The fractional figures beneath each decimal show the proportionate reductio for each ten feet of clear space between exposing and exposed buildings.

The Tables are intended to be used in measuring exposures among all classes of buildings under all grades of municipal protection, the limited number of exceptions being provided for by special rules.

NOTE.—The reason for a high basis rate and low exposure charge for frame rows in some states doubtless originated from a desire to secure adequate rates for cross-road stores and mercantile risks in towns too small for specific rating, but these risks form a class to themselves as distinct as farm risks, and are equally entitled to a separate tariff. A mercantile risk located where little or no human assistance is available in detecting or extinguishing a fire, is unquestionably entitled to a higher basis rate than a similar risk in a town large enough to justify a local tariff. Aside from this, the cross-road risk is usually rated from desk-tariffs, and seldom or never charged with the features of hazard embodied in regular schedules; hence, the same basis rate will produce a materially higher rate on a given risk in a town with a local tariff than in an unrated town.

In the absence of any data to the contrary, it is proper to urge that in establishing basis rates for frame risks in any state, they be lowered to a point that will give satisfactory rates in frame rows, figuring from the standard of 40 per cent. for unprotected towns, the standard being reduced for protection to conform to the preceding scale. (See column 2 above.)

☞The description of *exposed* buildings in the table, page 5, applies also to *exposing* buildings at the head of the several columns.

A tile, slate or composition roof is the equivalent of a metal roof.

A protected opening is one provided with standard fire doors or shutters or wire glass.

GENERAL EXPOSURE TABLE.

ring table applies to normal exposures—for abnormal consult page 28.)

Exposing Buildings.

	Frame or I. C. No. 1	I. C. No. 2 or Skeleton I. C.	BRICK VENEERED			BRICK SHINGLE ROOF		Brick Metal Roof
			B. V. No. 1	B. V. No. 2	B. V. No. 3	C. No. 1	C. No. 2	B. No. 1
Frame	All See Frame Table	All 1/5	All ¼	.7 ¼	.6 ⅓	.5 ⅓	.4 ⅓	.3 ½
ron Clad ith exposed openings	All 1/5	All ¼	All ¼	.6 ¼	.5 ⅓	.4 ⅓	.3 ½	.3 ½
ithout exposed open-	All ¼	All ⅓	All ⅓	.5 ⅓	.4 ⅓	.3 ½	.3 ½	.2 ½
k Veneered ith shingle roof or mansard	All 1/5	All ¼	All ¼	.6 ⅓	.5 ⅓	.5 ⅓	.3 ⅓	.3 ½
ith metal roof and apet or with unpro- penings	.7 ¼	.6 ¼	.6 ⅓	.5 ⅓	.4 ⅓	.3 ⅓	.2 ½	.2 ½
ith metal roof and 12 in. high. No un- ed openings.	.6 ⅓	.5 ⅓	.5 ⅓	.3 ½	.2 ½	.2 ½	.0	.0
Shingle Roof ooden mansard or roof sloping towards re	.6 ¼	.5 ¼	.5 ¼	.4 ⅓	.4 ⅓	.4 ⅓	.3 ½	.3 ½
ingle roof and para- ll with unprotected rs	.5 ¼	.5 ⅓	.4 ⅓	.3 ⅓	.3 ⅓	.3 ½	.3 ½	.2 ½
ingle roof and para- ll, all openings pro-	W. D.	W. D.	W. D.	.0	.0	.0	.0	.0
Metal Roof all without parapet unprotected open-	.4 ¼	.4 ⅓	.3 ⅓	.3 ½	.2 ½	.3 ½	.2 ½	.2 ½
rapet wall, all open- otected	W. D.	W. D.	W. D.	.0	.0	.0	.0	.0

The classification in preceding table refers to the side of building exposed. A building may be No. 1 on one side and No. 2 on the other, both sides, while No. 1 with reference to rear exposures.

All buildings that when in immediate contact (i. e., within ten feet) mmunicate Standard Exposure are designated by the word "All". of these buildings stand in solid rows they are rated in the same olid frame rows.

Brick buildings with solid parapet fire walls (C. 3 and B. 2) are m *exposing* buildings, because they radiate no exposure. When they the initials W. D. indicate Wall Damage Exposure, which see.

A brick veneered building which uses the wall of an adjoining brick neered building, should be treated as a B. V. No. 1 Building with this wall.

The absorbed exposure of all B. 1 buildings, with solid wall or penings, when separated by space, should be reduced one-half up to oint of normal exposure. Net charge to be cumulative with wall ny.

B. 2 buildings with fire shutters when over 2 stories, radiate same B. 1.

EXPOSURE TABLE.

(*Frame to Frame.*)

Showing proportionate additions, with relation to standard, when clear spaces intervene between frame buildings exposed by frames. (See explanation of General Exposure Table.)

FOR TOWNS OF CLASSES 4, 4½, 5 AND 6.

CLEAR SPACES.			EXPOSURE CHARGE.
ABNORMAL EXPOSURES.		NORMAL EXPOSURES.	
SMALL.	LARGE.		
Under 10 feet	**Under 20 feet**	**Under 15 feet**	**Standard**
10 feet	**20 feet**	**15 feet**	**.9 of standard**
15 "	**30 "**	**20 "**	**.7 " "**
20 "	**40 "**	**25 "**	**.6 " "**
25 "	**50 "**	**30 "**	**.5 " "**
30 "	**60 "**	**35 "**	**.4 " "**
35 "	**70 "**	**40 "**	**.3 " "**
40 "	**80 "**	**45 "**	**.2 " "**
45 "	**90 "**	**50 "**	**.1 " "**
50 "	**100 "**	**60 "**	**.0 " "**

FOR CITIES OF CLASSES 1, 2 AND 3.

CLEAR SPACES.			EXPOSURE CHARGE.
ABNORMAL EXPOSURES		NORMAL EXPOSURES.	
SMALL.	LARGE.		
Under 5 feet	Under 15 feet	**Under 10 feet**	Standard
5 feet	15 feet	**10 feet**	.9 of standard
10 "	20 "	**15 "**	.7 " "
15 "	30 "	**20 "**	.6 " "
20 "	40 "	**25 "**	.5 " "
25 "	50 "	**30 "**	.4 " "
30 "	60 "	**35 "**	.3 " "
35 "	70 "	**40 "**	.2 " "
40 "	80 "	**45 "**	.1 " "
45 "	90 "	**50 "**	.0 " "

For Abnormal Exposures, consult page 28.

EXTERNAL EXPOSURES.

(Definitions.)

When the unexposed rate of a building has been computed · preceding brick or frame tariff, this rate is referred to as *lividual Rate,* or, if building has more than one occupancy, *Omnibus or Multiple Occupancy Rate.*

The amount added to Individual or Omnibus Rate for ex-exposure is referred to as the *Exposure Load.*

The Individual or Omnibus Rate plus Exposure Load is the *Rate.*

A Solid Frame Row is one where the greatest clear space ı any two buildings is less than 15 feet. (This refers to l exposures. See Abnormal Exposures, page 28, and Frame ıre Table, page 6.)

The highest rate (Individual or Omnibus) *in a solid frame* referred to as the *Nuclear Rate,* because exposure charges are to this as a nucleus.

The Standard of Radiated Exposure is explained on pages 4.

TO RATE SOLID FRAME ROWS.

(Buildings.)

solid frame rows, all buildings take the same Final Rate, ıe Nuclear Rate plus its Exposure Load, which is invariably ndard ratio of the sum of the rates of the other buildings in v. (See Definitions, section *f*).

ıen the Final Rate has been established, the exposure load ı building in the row may be found by subtracting its In-l Rate from the Final Rate. (See Examples.)

(Contents.)

contents not on ground floor, nor a part of the ground floor take the same final rate as the buildings, except in cities s 1, 2 and 3. (See page 7 Frame Tariff.)

ɜ exposure load of ground floor contents of each building percentage of this building's exposure load, shown by the ıg table. When these loads have been found they should ed to the Individual or Omnibus Rate of each containing ʒ to establish the final rate of its contents. (See Examples.)

CONTENTS TABLE.

›wing ratio of exposure load of ground floor contents to ex-load of containing building under the different grades of ›al protection.

	Class 1, 2 and 3	Class 4 and 4½	Class 5 and 6
.ble	90%	80%	70%
movable	100%	90%	80%
novable	100%	100%	100%

TE: In rating contents of frame rows in cities of Classes 1, figure removability in same manner as for towns of Classes 4, and 6, and add to the contents rates so obtained one-third the .tial for like contents of brick building in same town. (See Tariff, page 7, Section *d.*)

NOTICE.

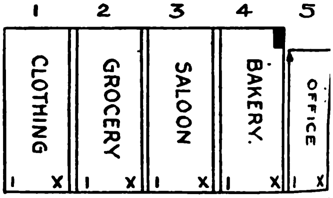
In all the following examples, the Individual or Omnibus R of each building is arbitrarily assumed for sixth class towns, c the standard of radiated exposure used, is stated with each e ample. (See Alternative Standards, page 4.)

SOLID FRAME ROWS.

Example No. 6.

Solid row of Frames with single occupancies.

EXPOSURE STANDARD 40%



Individual Rates	$1.50	$1.58	$1.50	$1.88	$1.25
(Exposures.)					
40% of others added to Nuclear Rate				2.33	
Final Rate of Buildings				4.21	
Exposure Loads of each building	2.71	2.63	2.71	2.33	2.96
(Contents.)					
Removable 70% of Exposure Loads	1.90	1.84			
Semi-remov. 80% of Exposure Loads			2.17	1.86	2.37
Individual Rates brought down	1.50	1.58	1.50	1.88	1.25
Final Rates of Contents	$3.40	$3.42	$3.67	$3.74	$3.62

The exposure load of each building is found by subtracting its Individual Rate from the Final Rate.

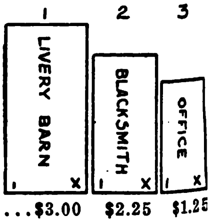
The exposure load of contents in each case is the ratio or percentage of building exposure load shown by Contents Table.

The classification as to removability of each of the stocks is found on page 8 Frame Tariff.

Example No. 7.

Solid row of Frames with single occupancies, embracing special hazards.

EXPOSURE STANDARD 40%



Individual Rates	$3.00	$2.25	$1.25
(Exposures.)			
40% of others added to Nuclear Rate	1.40		
Final Building Rate	4.40		
Exposure Loads of each building	1.40	2.15	3.1
(Contents.)			
Removable 70%	.98		
Semi-removable 80%			2.5
Non-removable 100%		2.15	
Individual Rates brought down	3.00	2.25	1.2
Final Rates of Contents	$3.98	$4.40	$3.7

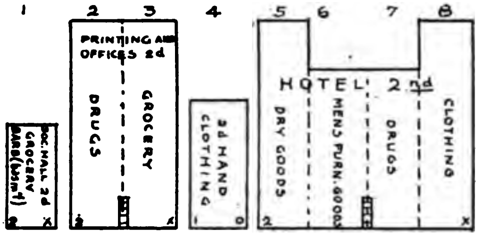
The live and rolling stock in livery stable are removable, whil hay, grain and feed are non-removable and take final building rate

c

EXAMPLE No. 8.

Solid Row of Frames with single occupancy and omnibus buildings.

EXPOSURE STANDARD 40%.



Individual and Omnibus Rates	$1.79	$3.20		$1.78	$4.15			
(*Exposures.*)								
40% of others to highest					2.71			
Final Rate of Buildings					6.86			
Exposure Loads.......	5.07	3.66		5.08	(2.71)			
(Contents.)								
Removable 70%.......	3.55		2.56		1.90	1.90		1.90
Semi-removable 80%...		2.93		4.06			2.17	
Indiv. Rates bro't down	1.79	(3.20	3.20)	1.78	(4.15	4.15	4.15	4.15)
Final Rates of ground floor contents........	5.34	6.13	5.76	5.84	6.05	6.05	6.32	6.05

In the above diagram, the buildings are brought forward from examples 1, 3, 4 and 5 in Frame Tariff.

It will be noted that solid rows containing Omnibus Buildings are rated in the same manner as solid rows of single occupancy buildings, the omnibus rate serving in lieu of individual rate.

OPEN FRAME ROWS.

Definition: An open frame row is composed of single exposing buildings (either omnibus or single occupancy) between which the clear spaces exceed the maximum clear space in solid rows. (See definition of Solid Frame Rows, page 7.)

NOTE: In *solid* frame rows, the radiated exposure of all the other buildings is added to the highest or nuclear rate, but in *open* rows each building radiates exposure to all the others.

(*Buildings.*)

Reduce the radiated exposure of each building for space to next building and note the net amount under its individual rate. Reduce this amount for space to next building and note under its rate and so on to the last exposed building or until the charge becomes reduced by successive transmissions to less than five cents when it may be waived.

This process should be repeated in turn for each of the several buildings, and when a building stands between others, its radiated exposure should be figured as above in both directions. The sums so noted under the rate of each building constitute its absorbed exposure and should be added to its individual rate to obtain its final rate.

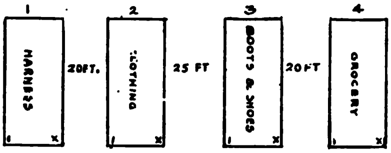
(*Contents.*)

The individual or omnibus rate of each building, if deducted from its final rate, will give its exposure load, and the ratio of this load shown by Contents Table, page 7, will be the exposure load of its contents. This should be added to individual or omnibus rate of building to obtain final rate of its contents.

EXAMPLE NO. 9.

Open row with single occupancies.

SURE STANDARD
40%



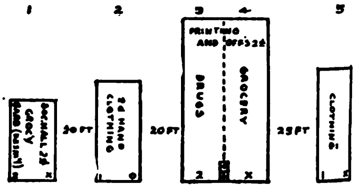
l Rates	$1.50	$1.50	$1.50	$1.50
posures.)				
others.................		.42	.25	.18
others.................	.42		.36	.25
others.................	.25	.36		.42
others.................	.18	.25	.42	
tes, Buildings.........	2.35	2.53	2.53	2.35
Loads...............	.85	1.03	1.03	.85
tents.)				
le (all) 70%..........	.60	.72	.72	.60
l Rates brought down.	1.50	1.50	1.50	1.50
tes, Contents.........	$2.10	$2.22	$2.22	$2.10

bove example, each building radiates 40 per cent of its l rate, which amount is successively reduced for space as nsmitted from building to building, thus:
radiated exposure of No. 1 across 20 ft. space to No. 2 -tenths of 60c. or 42c.; six-tenths of this is transmitted 5 ft. space from No. 2 to No. 3 (i. e., 25c.) and seven- 25c. is transmitted across 20 ft. space to No. 3 (i. e., 18c.). exposure of each of the other buildings is figured in like except that Nos. 2 and 3 radiate exposure in both direc-

Example No. 10.

Open row; omnibus and single occupancy.

EXPOSURE STANDARD
40%

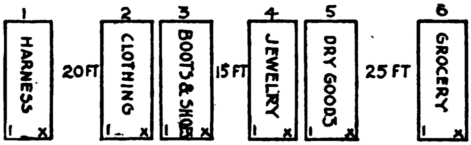


	1	2	3	4	5
Individual and Omnibus Rates.....	$1.79	$1.78		$3.20	$1.50
(Exposures.)					
1 to others......................		.50		.35	.21
2 to others......................	.50			.50	.30
(3 4) to others..................	.63	.90			.77
5 to others......................	.18	.25		.36	
Final Rates, Buildings............	3.10	3.43		4.41	2.78
Exposure Loads..................	1.31	1.65		1.21	1.28
(Contents.)					
Removable 70%..................	.92			.85	.90
Semi-removable 80%..............		1.32	.97		
Individual and Omn. Rates brought down	1.79	1.78	(3.20	3.20)	1.50
Final Rates of ground floor contents	2.71	3.10	4.17	4.05	2.40

Example No. 11.

Open row of single occupancy buildings with solid groups.

EXPOSURE
STANDARD
40%



	1	2	3	4	5	6
lividual Rates......	$1.50	($1.50	$1.58)	($1.50	$1.50)	$1.50
(Exposures.)			.60		.60	
o others.............			.42		.38	.23
3) to others........	.86				1.11	.67
5) to others........	.76		1.08			.72
to others............	.22		.32		.36	
ıal Rates, Buildings..	3.34		4.00		3.95	3.12
posure Loads........	1.84	(2.50	2.42)	(2.45	2.45)	1.62
(Contents.)						
movable (All) 70%..	1.29	1.75	1.69	1.72	1.72	1.13
liv. Rates bro't down.	1.50	1.50	1.58	1.50	1.50	1.50
ıal Rates, Contents..	$2.79	$3.25	$3.27	$3.22	$3.22	$2.63

In the preceding example, the first step is to bracket the indi-
ual rates of each solid group and note under the nuclear or
hest rate of the group, the radiated exposure of the other build-
or buildings in the group. In group (4-5) the rates of the two
ldings being the same, it is immaterial which is used as nuclear.

The exposure radiated by each solid group to the other buildings
groups is 40 per cent. of the sum of the individual and omnibus
es of all buildings in the group.

For example, group (2-3) radiates 40 per cent. of $3.08 reduced
space to other buildings or groups and group (4-5) radiates 40
cent. of $3.00 reduced for space. Otherwise exposures are fig-
d as directed for open rows.

The exposure load of each building in a solid group is the
erence between its individual rate and the Final Building Rate
the group, and the exposure load of its contents is the ratio of
building-load shown by Contents Table, page 7.

OPEN AND SOLID FRAME ROWS (MIXED).

When a row of frame buildings contains a mixture of single buildings and solid groups or rows, it should be rated as follows:

(Buildings.)

First note under the nuclear rate of each solid group the radiated exposure of the other buildings in the group, as if rating a solid row.

Proceed as directed for open rows, noting all exposures to the solid rows under the nuclear rate of each, and the exposures to the single buildings under their individual or omnibus rate as the case may be. Then foot up the exposures noted under each building or solid row and the totals will be their final rates.

NOTE: The exposure radiated by each solid row is the standard ratio of the sum of the individual or omnibus rates of all buildings in the row, reduced for spaces to other buildings or rows. In other words, each solid row radiates exposure as if it were one building bearing a rate equal to the total rates of the several buildings in the row.

(Contents.)

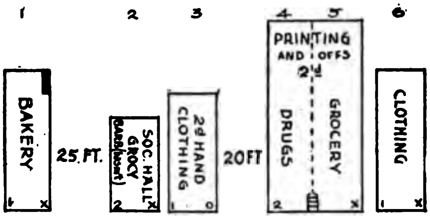
The exposure load of each building will be found by subtracting from the final rate, its individual or omnibus rate. This holds good whether the building is single or part of a solid row.

The exposure load and final rate of contents are found from the exposure load of each containing building in the same manner as directed for solid and open rows.

Example No. 12.

row with single and multiple occupancy buildings in solid ıd separated.

SURE
'ANDARD
40%



l Omnibus Rates..	$2.00	($1.79	$1.78)		($3.20	$1.50)
osures.)		.71			.60	
:s................		.48			.34	
others............	.86				1.00	
to others.........	.79	1.32				
es, Buildings......	3.65	4.30			5.14	
Loads	1.65	(2.51	2.52)		(1.94	3.64)
tents.)						
e 70%............		1.76			1.36)	2.55
›vable 80%.......	1.32		2.02	(1.55		
l and Omnibus Rates down............	2.00	1.79	1.78	3.20	3.20	1.50
tes of ground floor s.................	$3.32	3.55	3.80	(4.75	4.56)	4.05

BUILDINGS OTHER THAN FRAME.

TRANSPARENT CLASS.

The preceding examples, which show the various combinations i Frame Row Exposure, have all been figured from Frame Exposur Table, page 6.

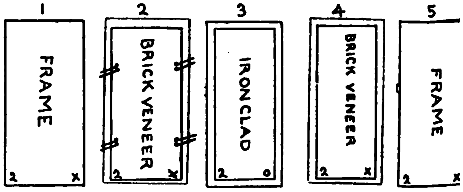
Other exposures should be figured from General Exposure Tabl page 5. By referring to this table, it will be seen that, in lieu o a decimal ratio, the word "All" appears a number of times in th upper left hand corner of the Table. This word indicates that th buildings so designated, impart all, instead of a part, of the standar ratio to each other. They are referred to as transparent becaus they transmit all the exposure they absorb from one side to *contiguou* buildings on the other side.

When these transparent buildings stand in solid groups they ar rated in the same manner as solid rows of frames, both as to building and contents.

EXAMPLE 13.

Transparent Buildings. Solid Row.

EXPOSURE
STANDARD
40%.



Individual Rates (Exposures.)	$1.50	$1.35	$1.41	$1.46	$1.50
40% of the rate of others to highest	2.29				
Final Building Rate	$3.79				

The rates of contents in above example are established fro Contents Table, page 7, in the same manner as for contents of sol frame rows.

(Open Rows.)

Transparent buildings, situated in open rows, are rated in the same manner as open frame rows, except that the reductions for space should be made according to the nature of the walls facing each space as indicated by General Exposure Table.

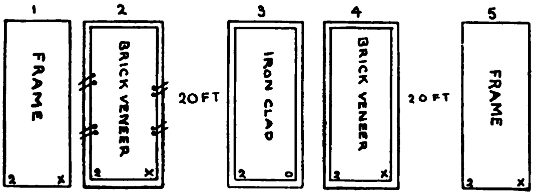
(Solid and Open Rows, Mixed.)

When a solid group of transparent buildings is found in an open row, these buildings should be bracketed and dealt with in the same manner as a solid group in a frame row (i. e., the exposure of the other buildings in the group should be noted under the nuclear rate). Each group radiates exposure from the sum of the individual rates of its buildings, though deductions for space are determined by the buildings that face space.

Example No. 14.

Transparent Class, Open Rows with Solid Groups. Same buildings as preceding example.

EXPOSURE
STANDARD
40%



	1	2	3	4	5
Individual Rates	($1.50	$1.35)	($1.41	$1.46)	$1.50
(Exposures.)	.54			.56	
(1, 2) to others..				.38	.19
(3, 4) to others..	.57				.57
5 to others......	.18			.36	
Final B'ld'g Rate	$2.79			2.76	2.26

In the above example group (1-2) radiates the exposure of a B. V. 1 building to an I. C. 2 reduced two-thirds for 20 ft. space. The net amount (38c.) is transmitted from (3-4) to 5 as the exposure of a B. V. 1 to Frame, being reduced one-half for 20 ft. space.

Group (3-4) radiates exposure to (1-2) as an I. C. 2 to a B. V. 1 and to 5 as a B. V. 1 to Frame, proper reduction being made in each case for space.

Building 5 radiates exposure to (3-4) as Frame to B. V. 1 reduced for space. The net amount (36c.) is transmitted to group (1-2) as the exposure of an I. C. 2 to a B. V. 1 being reduced one-half for 20 ft. space.

Note: The character of the facing walls always determines the ratio of exposure and the reduction for space. No matter how many or how diversified the buildings in a solid group, the exposure that comes to the group from one side is transmitted to buildings on the other side, according to the walls that face the space.

BLOCK RATING SHEETS.

In figuring exposures, it is not always possible to do so from a map or diagram and even with this information before him, the rater will find his work expedited by the use of the Block Rating Sheets which accompany this tariff.

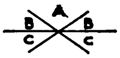
Besides other useful features, these sheets provide for the notation of information that, in the absence of a map, is indispensable to the computation of exposures. Aside from the structure of the exposing buildings and their individual rates, it is necessary to know three things:—

1st.—The distances between buildings (clear space).

2nd.—The decimal ratio of exposure standard.

3rd.—The denominator of the fraction in General Exposure Table, which indicates the reduction for space.

The Block Sheets contain a diagram which consists of a repetition of the following sketch showing two arrow heads pointing towards each other:



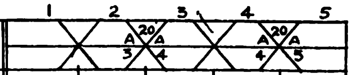
Each arrow head points in the direction of radiated exposure and in noting exposures the distance between buildings should be entered at A. The decimal ratio of exposure standard, radiated by each of the facing walls should be noted at B. B. and the reductions for each ten feet of clear space should be noted at C. C.

When the exposure radiated by a building is standard, the letter "A" (for "All") should be noted where B. B. appear in sketch. The letters W. D. may be used to indicate wall damage exposure.

All solid groups of transparent buildings should be bracketed in block-sheet and otherwise treated as in Example 14. Notations concerning a group need be made only over the buildings that face the clear spaces on either side.

It is always advisable, preparatory to figuring out a complicated situation, to note the necessary information in Block Rating Sheet as the remaining computations consist of simple multiplication and addition.

Example 14 worked out on a block-sheet would appear as follows:



	EXPOS STAND 40%	1	2	3	4	5
INDIVIDUAL RATES		(1 50	1 35)	(1.41	1.46)	1.50
(EXPOSURES)		54			.56	
(1 2) TO OTHERS	1 14				38	19
(3 4) " "	1.15	.57				57
5 " "	60	18			36	
FINAL RATES, BUILDINGS		$2 79			2.76	2.26

c

NON-TRANSPARENT CLASS.

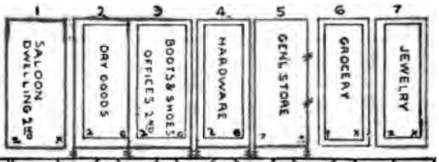
Buildings not designated by the word "All" in General Exposure le do not transmit all the exposure they absorb, hence they not, when in solid rows, be grouped by brackets, as it is neces- y to figure exposure successively from building to building, using this purpose the percentages found in General Exposure Table.

Examples 15 and 16 show the same buildings, the former in olid row, and the latter in an open row with solid groups. As ldings 6 and 7 in both examples are transparent and contiguous, y constitute a solid group, hence they are bracketed and the ex- ure of 6 to 7 noted under the latter.

In both these examples the diagram is placed for comparison above uled form similar to Block Rating Sheet, and as all the notations are ered in the form no further explanations are necessary. The osure standard used in both examples is 50 per cent.

Example No. 15.

Non-transparent class. Solid row.



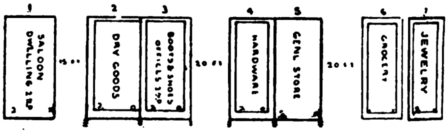
		STANDARD 50%	.2	4 .5	.5 .2	2 .0	0 .0	.5 A	A
TES	INDIVIDUAL RATES		$1.00	1.35	1.35	1.35	1.00	(1.41	1.46)
	(EXPOSURES).								.71
	1 TO OTHERS	.50		.10	.05				
A.	2 " "	.68	.27		.34	.07			
	3 " "	.68	.13	.34		.14			
	4 " "	.68		.07	.14				
B.	5 " "	.50							
	(6.7.) " "	1.44					.72		
	FINAL BUILDING RATES		$1.40	1.86	1.88	1.56	1.72		2.17

Note *A*: Building 2 has no independent wall adjoining 3, hence s treated as a B. V. 1 with reference to this wall. (See Gen- Exposure Table, Note 4.)

Note *B*: Openings in the second story of Building 5 are above roof of Building 6, hence its radiated exposure is negligible. e Buildings of Unequal Height.)

EXAMPLE No. 16.

Same buildings as preceding example, separated by spaces.



NOTES		STANDARD 50%	.2 2	15 .4 .5 3	.5 .2 2	20 2 0 2	0 0	20 .5 A 3	A
	INDIVIDUAL RATES		$ 1.00	1.35	1 35	1 35	1.00	(1.40	1.46)
	(EXPOSURES)								.71
	1 TO OTHERS	.50		.05					
	2 " "	68	.18		.34				
	3 " "	68	.09	.34					
	4 " "	68							
	5 " "	50							
	(6 7.) " "	1.44					.24		
	FINAL BUILDING RATES		$1.27	1.74	1.69	1.35	1 24		2.17

NOTE:—The 15 ft. space between 1 and 2 is treated as a 10 ft. space.

The exposure loads and final rates of contents of all the buildings in Examples 14, 15 and 16 are found in the same manner as for the contents of exposed frame buildings, excepting the contents of brick building No. 1 in Examples 15 and 16.

The method of treating the contents of exposed B. and C. buildings (i. e., buildings with brick or stone walls) will be explained in the next section.

CONTENTS OF EXPOSED B. AND C. BUILDINGS.

(*Exposure Load.*)

The ground floor contents of these buildings possess the quality of removability as well as damageability, though the probability of emoval is not so great as with the contents of frame rows. Where external exposure is heavy, it has been the practice among aters to add less for exposure to contents than to building, though here has been no rule upon the subject.

In such cases, Contents Table, page 7, may be used to establish the exposure load of contents. In a large majority of cases, owever, the exposure load of brick buildings is so small that it oes not justify the labor of computing the difference. For this eason and in order to make a reasonable allowance for the smaller robability of removal it is suggested that when the building load oes not exceed 20 cents, the same load be added to contents as to uilding. When the building exposure load exceeds 20 cents the ollowing rule may be applied.

Rule.—Deduct from building-exposure load 20 cents and add to ontents the ratio of the remainder shown by Contents Table (page), plus the 20 cents deducted.

Example.—Removable contents under sixth class protection:

Exposure load to building, $1.00—20c=80c×70%=56c+20c=76c.

The brick rating sheets furnished with Tariff provide for this method of figuring contents.

For contents of buildings subject to wall damage, see Wall Damage Exposure.

FALLING WALL EXPOSURE.

(Not to apply to exposure from buildings of steel construction.)

When a building is exposed to damage from falling wall of a brick or stone building, the following charge is to be taken as a percentage of the rate of exposing building:

If exposing wall is two stories higher than exposed building, add 2%

Increase charge 1% for each story over two.

Charge for falling wall exposure is cumulative with other exposures.

Note: The area of probable damage from a falling wall equals he area of the wall itself, less the area, braced by the wall of adjoinng building, if any, and the probable damage, anywhere in this area, s about the same. Instead of falling rigidly, however, walls frequently uckle, especially when forced outward by explosion, and a reasonable llowance in distance should be made for this contingency.

In view of these facts, the above charge may be reduced one-half or second exposed building within radius of wall's possible fall, and he charge waived for buildings beyond this.

If second building has a blank exposed wall, the height of exposing wall may be figured from top of this building, if it is higher than wall of nearest exposed building.

WALL DAMAGE EXPOSURE.

(From Frame and Iron-Clad Buildings to Buildings with Fire Wall.)

NOTE: Wall damage is largely caused by the heat generated by nearest building. Buildings beyond this simply multiply the chances of fire.

Building.

a. Add 10 per cent of basis rate of nearest exposing building, plus 5 per cent of excess of its final rate over the basis rate.

In towns of Classes 4 and 4½, take 80 per cent of above and reduce one-fourth for each 5 feet of clear space. In cities of Classes 1, 2 and 3, take 60 per cent and reduce one-third for each 5 feet of clear space.

NOTE: The final rate of exposing building should first be reduced by the amount of exposure it has received from the building with fire wall or from a direction that does not contribute to its wall damage.

b. When exposed fire wall has openings, all of which are protected by standard fire doors or shutters, wall damage as figured above should be increased one-fourth.

c. When wall is deficient in thickness, increase wall damage charge from one-fourth to one-half according to size and distance of exposure, and thickness of wall.

d. When nearest building is long enough to expose the unprotected rear, see Buildings of Unequal Length.

e. When exposing building rises above fire wall of a building so as to expose or be exposed by its roof, see Buildings of Unequal Height.

f. When a brick-veneered building has neither independent nor party wall, but utilizes the wall of brick building it adjoins, charge wall damage to the latter as directed in section *a.*

g. Any exposing building that is negligible with reference to ordinary exposures on account of its small size, should be treated as negligible with reference to wall damage exposure, though when part of a row, space should be measured from exposed wall to the nearest building beyond it.

h. When nearest building is a small, one story, but not small ough to be negligible, rater may use discretion in reducing wall mage exposure charge, one-half or one-third, according to the lative dimensions of exposing building and exposed wall, though, a small two-story building, it should be considered as a one-story twice its length.

j. Dwellings are negligible, not on account of their small size, ut of their low hazard. When a dwelling is the nearest building, eat it as an area of combustion and figure exposures from first uilding beyond as directed in Section *a*. When dwelling is only xposure, it may be treated as negligible.

k. Angular exposures to fire walls may be treated as negligi-le.

Contents.

In towns of Classes 4, 4½, 5 and 6, add to rate of contents one-alf the amount charged to building itself.

In cities of Classes 1, 2 and 3, waive wall damage charge to contents.

The above applies to contents of all floors.

BUILDINGS OF UNEQUAL HEIGHT.

NOTE: In the mutual exposures of frame or iron-clad buildings, inequality of height is provided for under the head of Abnormal Exposures.

a. In general, all buildings, excepting those of so-called fireproof construction, are of about equal combustibility, except as to their walls, which serve to intercept the *lateral* spread of fire in a degree corresponding to the character of facing wall. When exposing frames or iron-clads rise above the roof of buildings with brick or brick-veneered walls, in the absence of unprotected openings, exposure is radiated *through roof* of the latter instead of through facing wall.

In such cases it is proper to treat the lower building as radiating exposure, using the ratios provided in General Exposure Table. For example, a B. 2 building should be treated as a B. 1; a C. 3 as a C. 2, and a B. V. 3 as a B. V. 2; i. e., each building is to be treated as if radiating exposure through lateral openings.

b. As to the exposure absorbed through roof by a brick building without openings from higher frames or iron-clads, the parapet is protective in proportion to its height.

It is proper in such cases to treat the exposed building as directed in Section *a* (i. e., as a B. 1) and reduce the regular exposure charge according to height of parapet by the following scale used for Angular Exposure:

If parapet is 18 inches or over, but under three feet high, treat as "diagonal," reducing charge two-thirds.

If parapet is over three and under five feet high, treat as "glancing," reducing charge three-fourths.

If parapet is over five feet high exposure charge may be waived.

The above charges are cumulative with usual charge for wall damage, and when space intervenes between exposed and exposing buildings the entire charge may be reduced for space by the wall damage scale, i. e., one-fourth for each five feet.

c. When a B. 2 building, between frame or iron-clad buildings, is not high enough to intercept the direct exposure of these buildings to each other across its roof, it may be treated as a clear space equal to its width in figuring the exposures of these buildings to each other, the building itself radiating its own exposure as a B. 1 building and absorbing exposure from the other buildings, as before directed.

d. When the B. 2 building, however, is large enough to cut off all exposure between the frame, iron-clad or brick-veneered buildings, excepting that of roof to roof across its top, treat the mutual exposure of two shingle roofs as that of two C. 1 buildings at an equal distance. When the roof of either building is metal clad, its absorbed exposure may be ignored.

e. When a C. 3 building is exposed by frames or iron-clads:

If exposed wall is one story higher, charge regular wall damage.

If less than one story higher, increase wall damage one-half for overlapping exposure to roof.

If lower than exposing building, treat it as a C. 2 building.

f. When a B. V. 3 building is exposed by frame or iron-clad buildings that are higher than itself, it should be treated as a B. V. 2.

g. When two B. V. 3 buildings adjoin, the veneering of the two walls constitutes an equivalent for a solid 8-inch brick wall. When the two buildings are of equal height they may both be consistently treated as B. V. 3 buildings, but when one of the buildings rises above he other, the roof of the lower building radiates exposure as a B. V. 2 gainst a wall of only four inches thickness. In such cases exposures hould be figured as follows:

The lower building radiates exposure to the higher as a B. V. 2 nd absorbs exposure as a B. V. 3.

The higher building radiates exposure to the lower as a B. V. 3 nd absorbs exposure as a B. V. 3.

h. When facing wall of a B. building, without parapet, rises at ast three feet above building it exposes, it may be considered as the uivalent of a parapet for the lower building, and when it rises one ory or more above, it may be considered as a parapet for both uildings.

NOTE: When buildings adjoin, openings, if any, should be not less han 18 inches above its roof to constitute a parapet for lower building.

j. Facing walls of B. buildings *without parapet,* with openings, any, protected, radiate and absorb exposure with reference to other buildings as follows:

1. Buildings adjoining with less than 6 inches difference in eight, treat both as B. 1, and reduce charge to lower, one-fourth.
2. Same as No. 1, with 6 inches or over, and under 18 inches diference in height, treat both as B. 1. Reduce charge to upper one-ourth, and to lower, one-half.
3. Same as No. 1, with 18 inches or over, and less than 5 feet, reat both as B. 1. Reduce charge to upper, one-half, and waive charge o lower.
4. Same as No. 1, with 5 feet or over, and less than one story ifference in height, treat higher as B. 1, less three-fourths, and lower s B. 2.
5. If over one story difference, treat both as B. 2.

k. If openings in higher wall of two adjoining buildings are less han 6 inches above roof of lower, the latter absorbs exposure as B. 1, educed one-fourth.

If 6 inches or over, and less than 18 inches, lower building absorbs s B. 1 reduced one-half.

If 18 inches or over, treat the lower building as B. 2.

BUILDINGS OF UNEQUAL LENGTH.

When a B. 2 building stands between two frame or iron-clad buildings, but is not long enough to cut off the exposure of the rear end of these buildings to each other, the following modification of their mutual exposure charge may be made:

a. If both rears project beyond the rear of the B. building ess than 5 feet, or one is flush with rear of brick, and the other projects less than 10 feet, treat their mutual exposures as negligible.

b. If both project over 5 and less than 10 feet, or one projects over 10 and less than 20 feet, while the other projects less than 5 feet, their ordinary exposure to each other (diminished for space) may be reduced one-half.

c. If both project 15 feet or over, charge ordinary exposure, reduced for space.

NOTE: For the exposures of the rears to the intervening B. building, consult Angular Exposures and Wall Damage.

When a brick metal roof building with parapet walls and exposed openings is larger than the frame or iron-clad buildings which it adjoins, consult Angular Exposures.

c

ANGULAR EXPOSURES.

(To brick walls).

a. Other things being equal, angular exposure, in itself is less than direct or facing exposure at the same distance, but when found in combination it should not be treated as cumulative with direct exposure when the latter is larger than the angular exposure, excepting Wall Damage Exposure.

b. When, for instance, a B. building (No. 1) is directly exposed by a frame, the exposure charge is not to be increased because the frame extends far enough to the rear to expose the rear openings of the B.; but if the exposed wall is a fire wall and the frame in addition to its direct exposure to wall is long enough to impart angular exposure to unprotected openings in the rear, the charge for such exposure should be cumulative.

c. The charge for angular exposure should be proportionate to the angle. If over, say, 20 degrees, with reference to nearest exposed opening, it may be designated as "Diagonal", and if less than 20 degrees as "Glancing". Diagonal may be counted as one-half and Glancing as one-fourth the charge for direct exposure at equal distance (other things being equal).

NOTE: When cumulative with Wall Damage the charge for Diagonal may be made one-third instead of one-half.

d. Angular Exposure is applicable to mutual exposures arising from openings in brick walls. It is possible for openings to exist in two such walls, which, because of the fact that they do not face each other, constitute diagonal, glancing or even negligible exposures. Such cases are necessarily left to the discretion of the rater.

e. Angular Exposure also applies to parapeted brick walls with openings faced by frames or iron-clads when the openings are at a distance from the end of the latter, or are three or more stories above. When two stories above, exposure should be treated as direct.

f. When openings are found in that part of building which extends beyond the rear of the exposing frames or iron-clads, distances should be measured from nearest point of exposing building to nearest opening, and charge made for diagonal or glancing exposure as circumstances may require.

FIRE-STOP WALLS.

An approved brick wall built as a fire-stop in frame rows should be treated as follows:

a. When wall rises only to eaves of buildings it separates, treat it as equivalent to a clear space of 20 feet, or if either building has a metal roof, as equivalent to a clear space of 30 feet with respect to this building.

b. When wall rises even with or above the roof-combs of buildings it separates, treat it as equivalent to a clear space of 30 feet, or if either building has a metal roof, as equivalent to a clear space of 40 feet with respect to this building.

If wall has unprotected openings, reduce the spaces under *a* and *b* one-half.

c

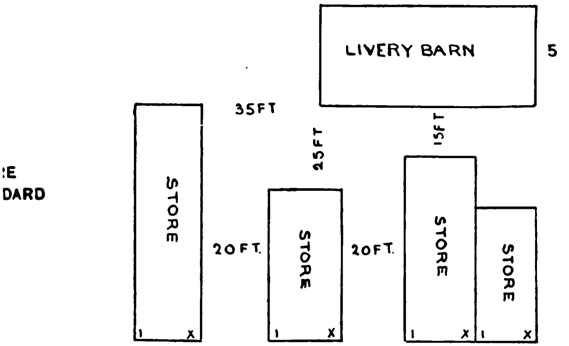
ELECTIVE EXPOSURES.

en frame or iron-clad buildings are not situated in straight ut expose each other in solid groups, they are rated in the ıanner as ordinary solid rows.

en spaces are found among buildings so situated, it often that a building or group exposes another building or group manner that it is possible to measure the exposure in more ıe way. In such cases it should be borne in mind that ɜ *flows through the channel of greatest hazard,* and should ·ed in the way that produces the highest exposure charge. ıy be determined in the manner pointed out in note under ɜ 17.

EXAMPLE NO. 17.

(Elective Exposures.)



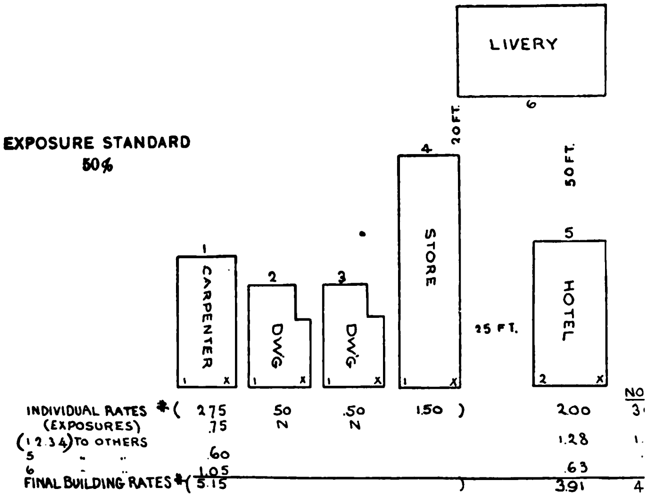
	1	2	3	4	NO. 5
UAL RATES	$ 1.50	1.50	(1.50	150)	300
OSURES)			.75		
THERS		.53	.37		.33
"	53		.53		.48
"	74	1.05			1.35
"	.67	.95	1.35		
UILDING RATES	$ 344	4.03	450		5.16

1 exposes No. 5 direct at 35 ft. It also exposes No. 5 Nos. 2, 3 and 4. The exposure should be figured through ·uildings, in preference to charging direct exposure across ft. space, because it produces a larger charge. For the same the exposure of No. 2 should be carried through Nos. 3 ıstead of being figured direct across the 25 ft. space to No. 5. posure of No. 5 to 1 and 2, for the same reason, should ied through (3, 4) and 2 instead of being figured direct.

ᴛᴇ: It is easy to determine the channel of greater hazard tiplying the space-ratios. In above example the ratio for ;pace is .4, while the two 20 ft. and one 15 ft. space-ratios ɔectively .7×.7×.9=.441.

EXAMPLE No. 18.

Elective Exposures.



The rule of elective exposures requires that the exposure group (1, 2, 3, 4) be charged direct to 5 and 6, and that mutual exposures of 5 and 6 be figured through the group ins of direct, each to the other. Thus, the exposure of 6 to grou reduced for 20 ft. space, making $1.05, and this amount red for 25 ft. space to 5, the exposure radiated by 5 being in the manner successively reduced for 25 and 20 ft. spaces.

The two dwellings, negligible as exposures, take the rate of other buildings in group.

ABNORMAL EXPOSURES.

a. The exposure tables, pages 5 and 6, provide for ordinar normal exposures. Abnormal exposures may be graded as *Nil,* *ligible, Small* and *Large,* which may be defined as follows:

Nil indicates structures so small that they may be ignored as to the exposure they radiate and transmit.

Negligible indicates risks so small or of such low hazard their radiated exposure may be ignored, though they should be re nized as transmitting exposure between other buildings.

Small and *Large* indicate buildings which, according to their radiate either more or less exposure than ordinary mercantile or industrial buildings, as found in the business districts of t and cities.

NOTE: As to what constitutes a large, small or negligible posure the discretion of rater must to a large extent determine, small risk of high hazard often constitutes as great an exposure larger risk of low hazard. Again, with brick buildings the number location of facing openings should be considered. Under exi usage all churches and schools may be treated as normal, and dwellings and their outbuildings and small office buildings negligible.

c

b. The following table refers to buildings with about the average hazard of the usual mercantile and light industrial occupancies found in the business districts of towns and cities. When a building contains a high special hazard occupancy (say, a wood-worker or a starred risk), the dimensions named for large should be reduced one-half.

TABLE.

Containing estimates of dimensions of *large, small* and *negligible* buildings.

		GRADES OF PROTECTION.			
		Class 1, 2 and 3.		Class 4, 4½, 5 and 6	
		Stories.	Gd. fl. area	Stories.	Gd. fl. area
Frames, iron-clads and brick veneered:	Large..	1	8000	1	5000
	" ..	2	5000	2	3000
	" ..	3 or over	All bldgs.	3 or over	All bldgs.
	Small..	1	1000	1	750
	Negligible..	1	400	1	300
Bricks:	Large..	1	12000	1	8000
	" ..	2	8000	2	5000
	" ..	3	5000	3	3000
	" ..	4	All bldgs.	4	All bldgs.
	Small..	1	1000	1	750
	Negligible..	1	500	1	400

NOTE: The above table refers only to radiated exposure. All buildings absorb exposure as normal.

Abnormal Buildings with Brick or Stone Walls.

In figuring the radiated exposure of these buildings proceed as follows:

a. *Small*—Refer to General Exposure Table and lower the decimal and the denominator of the fraction, showing reduction for space, each one point, i. e., if the decimal is, say, .3, and the fraction beneath ⅓, change to .2 and ½, and figure out the result as for ordinary exposures.

b. *Large*—Raise the decimal and the denominator of its fraction in General Exposure Table two points, increasing each again one point for each additional story over 4 until the increase makes the decimal ten-tenths (in other words, until the radiated exposure is brought up to standard.)

As large exposures are nearly always from either frame or brick buildings, the following table will be found convenient for reference:

TABLE.

c. Showing ratio of standard and space reductions for large radiated exposure.

	Stories.	P. C. of Standard.	Reduce for each 10 ft. space
Frames exposing bricks...........	2	.6	1-6
" " "	3	.7	1-7
" " "	4	.8	1-8
" " "	5 and over	.9	1-9
B. 1 buildings exposing frames....	4	.5	1-4
" " " "	5	.6	1-5
" " " "	6	.7	1-6
" " " "	7	.8	1-7
" " " "	8 and over	.9	1-8
B. 1 exposing B. 1 buildings.......	4	.4	1-4
" " " "	5	.5	1-5
" " " "	6	.6	1-6
" " " "	7	.7	1-7
" " " "	8 and over	.8	1-8

NOTE 1: When window surface of facing wall of B. 1 buildings exceeds one-half of wall area the exposure established by preceding table should be increased 30% for three-story buildings, 40% for four-story, 50% for five-story, and so on, increasing ten points for each additional story. The maximum charge, however, should not exceed the standard ratio—in other words, should not exceed the exposure that would be radiated by a frame building.

NOTE 2: Wire-glass may be waived for ground floor of *B.* buildings as to their radiated exposure to other *B.* buildings, 40 feet or more distant.

Fire shutters and (or) wire-glass may be waived for ground floor of B. buildings as to their absorbed exposure from other B. buildings 40 feet or more distant.

NOTE 3: The absorbed exposure of B. 1 buildings with solid wall or protected openings vanishes at 20 feet. (See Note 5, page 5.)

Abnormal Frame Exposures.

* NOTE: In the preceding rules for Abnormal Exposures from brick buildings the ratio of Exposure Standard in General Exposure Table is raised or lowered for Large or Small, as well as the fraction showing reduction for space. Consistency would seem to demand that in figuring abnormal exposures from frame buildings, the standard should be modified in like manner as well as the ratios showing space reductions. A careful examination of existing tariffs, however, fails to show that this feature in frame exposures has ever been taken into account, and to do so would make some drastic changes in existing rates. It would doubtless be impracticable to raise the standard for "Large," and it is questionable whether it should be lowered for "Small." Abnormally small frame mercantile and special hazard buildings as a rule have small insurable values and transitory tenants of doubtful commercial standing with low grade custom. These buildings doubtless shelter far more than their share of moral hazard; they are usually crowded and faulty in their lighting and heating arrangements and altogether may be regarded as making up in hazard what they lack in size. For these reasons the exposure of these risks is figured as normal, so far as the standard of radiated exposure is concerned, but the Frame Exposure Table, page 6, provides a scale of space reductions for small which makes a reasonable concession when these buildings are separated from the buildings they expose by space.

In figuring the radiated exposures of large and small frames proceed as follows:

a. Solid Rows: In these rows add to the nuclear rate the standard ratio of the total rate of the other buildings in the row the same as in rating ordinary frame rows.

b. Open Rows: Proceed as for ordinary open frame rows, making reductions for space as directed in Frame Exposure Table, page 6.

NOTE: In figuring open rows it should be borne in mind that a frame building transmits the same kind of exposure it radiates, i. e., if large, all exposure it transmits to buildings beyond it should be figured as Large, or if small, it transmits small exposure. These buildings, however, absorb the same exposure as other like buildings. (See Frame Exposure Table.)

Negligible Exposures.

Embracing dwellings and their outbuildings, small office buildings and other buildings of abnormally low hazard or small size.

The radiated exposure of negligible buildings may be ignored, but they transmit exposure between other buildings.

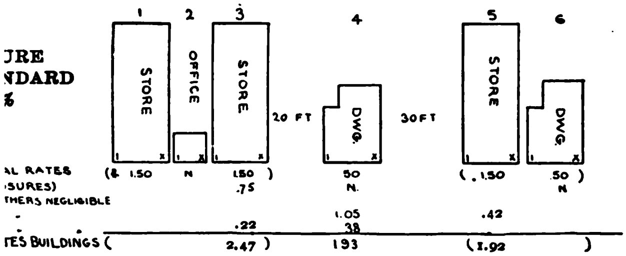
a. In solid frame rows these buildings should be left out of the computation of exposures, but should themselves take the rate of other buildings in the row. The exposure load of the contents of a negligible building, however, should be figured upon the difference between its Individual Rate and its Final Rate.

In open frame rows treat a negligible building as part of
lding it adjoins in measuring space, giving it same rate. If
ed by a space on both sides, it does not radiate exposure, but
the same exposure as other buildings, and transmits exposure
all" (see preceding note). Its exposure load should be added
ndividual rate, and the exposure load of its contents found as
in preceding section.

In open rows a negligible building should not take a rate
han the nearest building in direction from which it receives the
exposure, unless this building is itself negligible.

EXAMPLE No. 19.

Negligible exposures.



office No. 2 and dwelling No. 6 take the same rate as mercan-
dings which they adjoin, and in rating contents their exposure
he difference between their Individual and Final Rate.

lding No. 4 adds no exposure to other buildings in itself, but
exposure regularly, and transmits exposure as "small".

DWELLING EXPOSURES.

dwelling class is so largely competitive that it is as
ble to establish rules of exposure that will be generally
ble as it would be to establish a uniform basis schedule
llings. In some Southern States dwellings have produced
so unfavorable that regular dwelling schedules and expo-
les are in use, but in many Northern States competition
lished basis schedules and all rules for exposures.

he preceding formulas, the exposure from dwellings has
eated as negligible to conform to usage in states where
er course is negatived by competition. This should not
rued, however, as a waiver of dwelling exposure in states
t has been the practice to take it into account, and there
ng to prevent raters from utilizing the General Exposure
r this purpose. It is proper, however, to call attention to
that, while dwellings absorb as much exposure as other
nere is a marked difference in the exposure they radiate.
o constant human presence, the number of dwelling fires
shed in their incipiency is much greater than with mer-
and manufacturing risks. Exposure hazard comes entirely
es that escape from the buildings in which they originate
standard of radiated exposure is established as a ratio
azard of the individual risk, it is evident that this standard

should be reduced for dwellings in proportion to the greate ber of fires extinguished in this class before they bre boundaries of the building in which they originate. If th eral Exposure Table is used for dwellings the standard o ated exposure may be reduced at discretion. Some rater obtained satisfactory results by treating all exposures r or transmitted by dwellings as "small."

These remarks are purely suggestive, and as this is a r tile tariff only, raters are at liberty to apply such rules to ing exposures as their judgment or existing usage may

STEEL BUILDINGS.

These risks usually have a large amount of exposed windo face, but differ from ordinary *B* buildings in the fact that their construction does not contribute to combustion; hence their r exposure is determined by their contents. The rates of steel bu are so low that their radiated exposure is unimportant, especiall occupied as office buildings. When they are occupied for merca manufacturing purposes and contain large amounts of combu as with Department Stores, etc., it is proper to charge normal r exposure as from ordinary *B* 1 buildings. Exposure from Office ings may be waived.

As to absorbed exposure, the buildings themselves appear t liable to exterior damage as ordinary *B* 1 buildings, though th ability of fire spreading through the interior is largely determi the amount and combustibility of contents. In cities, these bu often tower above blocks of ordinary *B* buildings, which radiat sure through their roofs (see Section *a,* page 24) against a faci consisting almost entirely of window surface. There seems to escape from the conclusion that these buildings absorb the sam sure from adjoining roofs as ordinary *B* buildings of like const though, as stated, the liability of fire to spread inside is determi the contents.

At present, competition precludes the application of any fix and the whole matter is necessarily left to judgment. A cha absorbed exposure, under the rules for buildings of unequal would seem to be proper for all buildings of this class, occup mercantile or manufacturing purposes, where large quantities o bustibles are found. For office buildings or buildings where th tents grade as C 1, the absorbed exposure might be reduced on

SPRINKLERED RISKS.

Standard sprinklered risks are usually rated so low tha radiated exposure would be unimportant even if charged by th used for ordinary risks, but the loss ratio which justifies the low for these risks is caused by an unusual proportion of small fires, do not escape from the building; hence their radiated exposure to be reduced by an even greater ratio than their internal haza view of these facts, the radiated exposure from bricks may, as be waived and for frames, a reduction of one-half seems to be n than proper.

As to absorbed exposure, it is evident that sprinklers are a greater rotection against internal combustion than against exposure. In fact, prinklers do not protect against damage to exterior of building itself, and a heavy frame exposure is liable to overcome sprinkler protection. At present, competition precludes the application of careful schedule rating to these risks, though the following points are suggested:

1st. When a sprinklered risk has an exposed fire wall, it is as liable to wall damage as ordinary risks.

2nd. When the exposed wall has unprotected openings, one-half the usual exposure charge to building of like construction should be made as a minimum and increased to say two-thirds for heavy frame exposure.

3rd. When a frame sprinklered risk is exposed, charge two-thirds of ordinary charge for like exposure and increase to full charge for heavy frame exposure.

CENTERS AND AREAS OF COMBUSTION.

Small outhouses, sheds and private barns, usually found in ack yards and along alley-ways *in rear of frame rows,* while they may be considered negligible as to their own exposure to other hazards, frequently constitute important media in the pread of fire. The number and irregularity of spaces found among these structures render it impracticable to calculate exposures by clear spaces as with frame rows, though it is often ssential to an intelligent rating of other buildings that these congeries of small structures be taken into account in calculating xposures.

It is recommended in such cases that the rater on the ground r map-maker, establish by judgment and note on map, a point which may be considered the probable center of combustion of uch buildings, in order that in computing exposures, clear spaces may be figured to and from the nearest approach of exposed and xposing buildings or rows to this imaginary point.

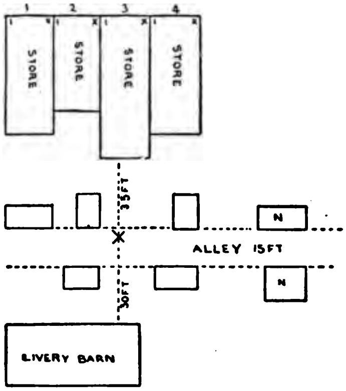
When the outhouses are so small as to be negligible individually, the center of combustion may be designated by a cross, ut when one or more are of considerable size (say 200 square feet r more in area) the center of probable combustion should be designated by an area in the same manner as directed for Lumber Yards.

When the point or area has been so established exposures may be figured regularly, deducting for space to combustion center (or area) and again for space from this to exposed risk, treating the latter space as for "small" exposures.

In establishing centers or areas of probable combustion, as above suggested, it is necessary to include only the outhouses which judgment would suggest as being near enough to the path f probable combustion between the nearest exposing buildings, o be considered material to the computation.

Diagram.

Showing method of figuring exposures through centers of combustion.



The exposure of the frame row to the livery barn is figured from half the sum of the Individual Rates, this amount is reduced for 35 feet space to the center of combustion X, and the result again reduced for 30 feet space between X and the livery barn.

The exposure radiated by the barn is reduced for 30 feet space to X, and again reduced for 35 feet space between X and the nearest building in the row.

The two outhouses marked "N" are nil, because outside the path of probable combustion, hence are not to be considered in establishing the location of X.

When the outhouses are of considerable size the center of combustion should be designated by an area instead of a cross, and exposures figured to and from this area, as with dwelling No. 4 in Example No. 19.

RETAIL LUMBER YARD EXPOSURES.

These risks in small towns usually consist of scattered piles of lumber separated by considerable spaces, interspersed with buildings consisting of sheds, office, lime-house, and sometimes carpenter shop, paint house, agricultural implement house, stables, etc., etc. Sometimes the yard is all under a single roof or is so compact as to constitute practically a solid mass of combustible material. In such cases exposure should be figured as if the entire yard were an exposing or exposed building of like area and rate.

When the yard consists of scattered material and buildings, the rater or map-maker should designate, to the best of his judgment, on map, an area of combustion (which would be the equivalent in exposure of a frame building of like dimensions and rate). The size and location of this area necessarily depend upon judgment, guided by the relative density of the piled lumber and buildings in the yard.

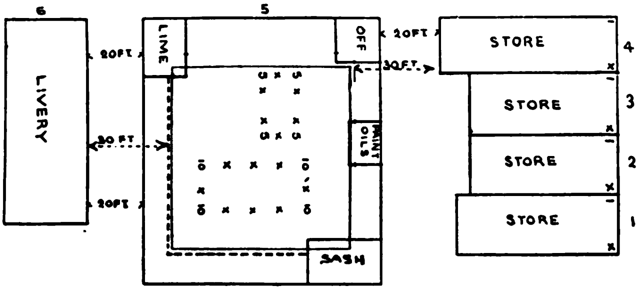
Distances between the nearest approach of this imaginary area to the nearest buildings on either side should be noted on agram and exposures figured as if this area were a single frame ilding bearing the rate of the Lumber Yard.

In diagraming lumber yards the location of the piles of lumer may be designated by a series of X's with figures at the orners, showing average height of piles.

This will be best understood after an inspection of the folowing diagram:

EXAMPLE No. 20.

Showing method of figuring lumber yard exposure by means of area of probable combustion.



ESTIMATE OF EXPOSURES

	1	2	3	4	5	6
INDIVIDUAL RATES (EXPOSURES)	*(1.50	1.50	1.50	1.50) 2.25	1.00	2.00
2·3·4) TO OTHERS					1.50	.75
5 " "				.25		.25
6 " "				.38	.75	
INAL RATES BUILDINGS & YARD (				*4.38)	3.25	4.00

EXPOSURE STANDARD
50%

Note: The red line in Lumber Yard encloses estimated area probable combustion, with 30 feet of clear space on either side.

STOP RATES.

It has been customary to establish a stop rate in each state r frame rows.

It is suggested that when these are printed in local tariffs, an planatory note should state the actual rate as figured by tariff, information for the companies. When the total hazard is largely excess of the stop rate, a carefully figured estimate is, of course, t essential, as the only object is to let the companies know about w much of a concession they make in accepting the business at e stop rate.

There seems to be no established usage as to the stop rate of ntents as compared with that of building and, in order to bring out uniform practice, it is further suggested that the excess of e stop rate over the individual rate of each building should be eated as an exposure load and the ratio of this load, as shown Contents Table, page 7, be applied to find the stop rate of ntents.

There is an apparent necessity for a stop rate for brick buildings and contents heavily exposed by frames, as, without this, the local tariff will sometimes establish a higher rate for such risks than for adjoining frames.

It is suggested that the maximum rate of brick buildings in such cases be limited to 60 per cent. of the stop rate of frames in same field.

c

APPENDIX.

CLASSIFICATION OF OCCUPANCY.

The following classification of occupancy was used in the construction of the Alphabetical List of Occupancies in Brick Tariff and is published in order to make clearer the rationale of the tariff itself, also because it will be found useful to raters in estimating the hazard not only of risks which do not appear in the Alphabetical List but of those found in the list which present special features for which the list does not adequately provide. With the building schedule and the following classification it will be found possible to establish an intelligent estimate of almost any brick risk likely to be encountered in actual rating.

The factors of hazard found in occupancies of Mercantile Buildings are divisible into—

1st: *Causes,* i. e., the things which originate combustion.

2nd: *Media,* i. e., the substances on which the causes act with reference to their latent energy or combustibility.

3rd: *Effects,* i. e., the relative susceptibility of media to damage as the direct or indirect results of fire—commonly known as damageability.

Note: The Alphabetical List of Occupancies in Brick Tariff contains three columns which may be respectively designated as the columns of Cause, Medium and Effect.

Causes are cumulative and media climacteric. A cause, say a hand furnace, may start a fire but it does not contribute to the combustion that follows. While it is more hazardous in proportion to the combustibility of the materials by which it is surrounded and should bear a charge to correspond with this combustibility, it is to be reckoned with, otherwise, as a cause regardless of the number of occupancies in a building, and for this reason, in either single or multiple occupancy buildings, all charges in column 1 enter into the rate.

On the other hand, combustibility, as a form of latent energy, is governed by the physical law that all transfers of energy of any given kind are from bodies having more to those having less. Under this law, the highest charge only in column 2 should enter into the rate, regardless of the number of occupancies in the containing building.

The classification of No. 1 follows Nos. 2 and 3 in the following pages, for the reason that the measurement of a cause is determined by the latent energy (combustibility) of the medium by which it is environed.

ANALYSIS AND CLASSIFICATION OF MEDIA

NOTE: Of the numerous factors which make up the sum total of the fire hazard found in occupancy, the quality of combustibility seems least amenable to the accurate definition which is always a pre-requisite to exact classification. The combustibility of an occupancy is sometimes determined by the packages, or containers, more than by the merchandise itself. At other times the materials used for packing, or the debris resulting from unpacking, constitute the real hazard of an occupancy. These features, it is true, present no serious difficulties, for it is as easy to determine their combustibility as that of the merchandise itself, but the important feature of *quantity* is to be reckoned with, and quantity is a *continuum*—a thing without dividing lines; that is, susceptible of infinite division. Again, quantity in itself is often affected by mass or density of arrangement. Stocks of merchandise are necessarily spread out for display while merchandise in storage is disposed with a view to economy of space, and is generally found in large aggregations, "piled to the ceiling." Compression and a lack of proper aeration are the two most important influences conducive to spontaneous combustion and in warehouses closely packed an incipient fire is likely to be inaccessible, while its progress is facilitated by concealed spaces. These things are more inherent with certain substances than with others, particularly with fibrous materials not protected by boxes, barrels or other rigid packages, of a lower grade of combustibility, that prevent compression.

As to combustibility, unaffected by the influences mentioned, it seems impossible to differentiate it into more than five definitive grades that are inherent in the substances themselves. These gradations, stated in the briefest terms, are as follows:

a. Non-combustible.
b. Moderate-burning.
c. Free-burning.
d. Intense-burning.
e. Flash-burning, ranging from semi to full explosiveness.

The important influence of quantity is shown by the fact that substances of grades "d" and "e" are freely admitted with stocks of grades "a," "b" and "c" in small quantities and safe containers, while the free-burning class "c," when found in large aggregations, takes rank with or even surpasses in fire hazard substances of grade "d" in the moderate quantities and safe containers which custom has established for these substances.

As before stated, quantity and arrangement are not susceptible of classification, for quantity may range, for example, from a few bales of hay in a feed store to the contents of an immense hay warehouse. In the large majority of cases, however, commercial usage or necessity has established broad lines of demarcation with nearly all substances likely to be materially affected by quantity, for these substances are usually to be found either in a retail stock spread out for sale, or awaiting use, shipment, or distribution in a large warehouse where quantity with its accompaniments (compression, imperfect ventilation, concealed spaces, inaccessibility, etc.) produces its maximum effect.

The five grades above stated are used in the following classification, with two intermediate grades which, even if not susceptible of close definition, are necessary to provide for the gradations of hazard caused by quantity and other unclassifiable features of combustibility.

COMBUSTIBILITY.

Low. (C. 1.)

Merchandise which does not in itself constitute a fuel for the spread of combustion.

Examples: Hardware, Leather, Hides (green or dry), Rubber Goods, Wool, Woolen Goods, Canned Goods, etc.

Middling. (C. 2.)

Merchandise which burns moderately in itself but may contain small quantities of a higher grade of combustibility, either through policy permits or common usage.

Examples: Retail Groceries (with matches, coal oil, etc.), Dry Goods or Country Store Stocks (with celluloid goods, cotton batting, millinery, straw goods, etc.)

High. (C. 3.)

Merchandise which burns freely, constituting an active fuel.

Examples: Straw Goods, Millinery, Hay, Hemp, etc.

Intermediate. A. (C. 3½.)

This grade is not susceptible of definition by quality but is used principally for quantity, being available for large open stocks of C. 3, or for moderate quantities of C. 4, also for some grades of class C. 7 (unclassifiable), which see.

Quasi-Incendiary. (C. 4.)

Merchandise that burns with great intensity and is difficult to extinguish, but is not liable to spontaneous combustion or to ignition, except through actual contact with fire.

Examples: Matches, Celluloid Goods, Saltpeter, etc., also combustible substances finely divided, such as shavings in hand woodworkers, carpenter or cooper shops, etc., but not so finely divided as to constitute explosive dusts.

NOTE: The merchandise that legitimately belongs to this class is so dangerous that it is seldom or never found except in negligible quantities or in protective packages of a lower grade of combustibility, hence class C. 4 is seldom used for mercantile stocks. It is frequently available as a quantitative grade for storage of substances which *per se* belong to grade C. 3.

Intermediate. B. (C. 4½.)

Like C. 3½, this grade is not susceptible of close, qualitative definition, but it is available for minor industrial risks or where Grade C. 5 is reduced by an approved blower system, also for animal substances, such as wool, felt, etc., which give off combustible dusts of a lesser hazard than the dusts from fibrous vegetable substances such as wood, cotton, etc.

The class is also used quantitatively for large storage risks of grade C. 3 or C. 4.

Incendiary. (C. 5.)

Including substances that burn with an intensity equal to or greater than C. 4, and in addition give off inflammable or explosive vapors at ordinary weather-temperatures, or that spontaneously ignite through exposure to air or moisture, also substances which as a result of industrial processes produce large quantities of dusts, lint, and other finely divided vegetable debris that is subject to flash fires or explosions, if not safely disposed of through an approved blower system.

Examples: Crude petroleum and all its lighter products, ethers, carbide, turpentine, and the debris of planing mills, cotton gins, flouring mills, etc.

Indefinite. (C. 6.)

Merchandise, the hazard of which through uncertainty as to its nature, can be determined only through limitations embodied in policy forms.

Examples: Department Stores, Wholesale Drugs, Wholesale Groceries, General Storage Warehouses, Chemical Works, Proprietary Medicine Factories; also Auction Ware-rooms, Warehouses of receiving commission firms and other risks where contents are liable to frequent change.

Note: Risks of this class necessarily take one of the regular grades (C. 1 to C. 5, inclusive), the grade being subject to modification when policy form eliminates dangerous substances and processes.

Unclassifiable. (C. 7.)

Substances that cannot be identified with any of the preceding classes, or that, if so classifiable by their physical characteristics, have a known fire record that makes them discredited either on account of their tendency to spontaneous combustion or because of an undiscovered hazard either physical or moral.

Examples: Oiled Clothing, Cotton Waste, Shoddy, Second-hand Goods, Household Furniture Ware-rooms, Junk and Rag Stocks, Bone Dust, Charcoal, Lime, Acids, Dye Stuffs, etc.

This class also covers a number of special hazards and is designated in Alphabetical List of Brick Tariff by a dagger.

Note: Risks of this class are necessarily graded by judgment, but should take one of the regular grades—C. 1 to C. 5, inclusive.

EXCEPTIONS.

a. Classification is, in many cases, determined by packages, wrappings or display shelving, or in some cases by the materials used in large quantities for packing, or, on the other hand, by the debris resulting from unpacking, rather than by the merchandise itself.

For example: Retail Stocks of Confectionery, Boots and Shoes, Queensware, Fruit or Produce Stocks, which in themselves are non-combustible, may appropriately be classed as C. 2 or even C. 3, while Furniture Stocks, which would ordinarily class as C. 2 when found in large ware-rooms crated or wrapped in paper, excelsior, etc., should grade as C. 3 or even as C. 3½, according to circumstances.

b. As before stated, classification is also determined by quantity or density of arrangement, either or both. When found in large quantities in crowded premises "piled to the ceiling," etc., merchandise should take a higher grade of combustibility, according to the circumstances.

This condition belongs largely to merchandise of the grades of combustibility, C. 3 or over, and is most often found in warehouses or industrial risks, as hay, broom-corn, wooden-ware and broom warehouses etc. In feed stores, or uphostering supply stocks, for example, hay, straw, moss, hemp, excelsior, etc., may raise the combustibility from C. 2 to C. 3, C. 3½ or 4, according to quantity, while hay in large hay warehouses should class as C. 4½.

On the other hand, when the quantity of any given grade is so small as to be inconsequential, it may be treated as negligible and the charge for combustibility waived. This applies to contents of offices, banks, schools, armories, bowling alleys, etc., also to small quantities of inflammables such as matches, oils, chemicals, etc., ordinarily allowed without charge in groceries, country store stocks, retail drug stores, etc.

NOTE: The features mentioned in sections *a* and *b* also contribute to the classification of fluids according to their combustibility and tendency to give off inflammable vapors. These may be divided as follows:

	Combustibility.	*Inflammable Volatility.*
a. Wine, Beer, Molasses, Vinegar, Ammonia, etc.	None.	None.
b. Heavy Lubricating, Vegetable, Animal and Fish Oils	Low.	None.
c. Alcohol, Whiskies, Coal Oil of U. S. Standard	Medium.	Medium.
d. Gasoline, Benzine, Naphtha, Crude Petroleum, Turpentine, Ethers, Varnishes, etc.	High.	High.

These substances are usually stored in barrels, demijohns, carboys, bottles, etc., which tend to reduce hazard in proportion to the absence of volatility, though, especially with grades *c* and *d*, quantity is as important as with non-fluid substances.

The substances described under "*a*" are neither volatile nor combustible, so that wooden packages tend to increase hazard.

Heavy lubricating, vegetable, fish and animal oils usually constitute grease risks and class as C. 3½, when free from industrial processes.

Alcohol, whiskies, etc.: The vapors of these are explosive only under high temperatures, and in ordinary retail or wholesale stocks may be safely graded as C. 2, but in large warehouses should grade C. 3 to C. 3½, while coal oil of U. S. standard should grade as C. 4 when found in more than negligible quantities. (Whiskies in bonded warehouses are competitive, and at present, rate can be established only by judgment.)

Crude Petroleum and all its lighter products, ethers, etc., are permitted only in small quantities or by established rules. When found in large quantities, they should be classed as C. 5, and on account of rapidity of combustion, reduced credit should be allowed for Fire Department protection.

Acids in carboys are, as a rule, non-combustible but highly explosive, and the escaping fluids set up violent combustion when they come in contact with many solid substances, such as fats, oils, resins, fibrous materials, etc. Their vapors are also dangerous to life, being so poisonous as to prevent access to the premises where they are at large. All these belong to Class C. 7, and their presence should be met by a punitive after charge.

c. When an industrial process on a small scale is carried on in the open in connection with a regular mercantile stock, the materials "raw, wrought and in process," including usual debris, when not in negligible quantities, should determine the classification of stock, and in any event, combustible materials in process should take one grade higher combustibility than a regular stock of merchandise of similar nature.

d. Mixed stocks consisting of two or more distinct classes of merchandise in quantities sufficient to determine the character and extent of combustion, should be classed by the merchandise of highest combustibility.

Charges for Combustibility.

The following percentages of Basis Rate should be added for the different grades of combustibility shown by the preceding classification:

C. 1.	5%
C. 2.	10%
C. 3.	20%
C. 3½.	40%
C. 4.	80%
C. 4½.	160%
C. 5.	320%
C. 6.	According to personal survey or policy conditions.
C. 7.	Class as one of the above grades by judgment.

.NALYSIS AND CLASSIFICATION OF EFFECTS.

(DAMAGEABILITY.)

The effects of fires may be divided into Direct and Resultant.

Direct Effects are those caused by the actual combustion of the bstances themselves or by change in their molecular structure used by the heat of adjacent combustion.

Resultant Effects are those that are incidental to fires, caused her by the efforts to suppress combustion or to remove merchandise m burning premises or by effects of adjacent combustion other an heat. The most usual resultant effects of fire are from smoke, ter, dampness, change of temperature (either hot or cold), break- e, soilure, theft, etc.

NOTE: Merchandise that is highly susceptible to damage may ve its damageability materially reduced by protective packages, and ese should be taken into account in classifying.

Damageability is classed under five grades, as follows:

Low. (D. 1.)

Merchandise that is largely immune to Resultant Effects, being terially affected only by the Direct Effects of fire, as

Heavy hardware, leather or rubber stocks, hides, wool and woolen goods, canned goods, barreled meats or fish (cured), etc.

Middling. (D. 2.)

Merchandise that is but moderately affected by Direct and Re- tant Effects, as

Retail groceries, dry goods, boots and shoes, hats and caps, etc.

High. (D. 3.)

Merchandise that is easily damageable by Direct or Resultant ects, as

Musical merchandise, books and stationery, paper, butter, egg and cheese stocks, fruits, etc.

Extra. (D. 4.)

Merchandise that is liable to heavy damage from slight causes, er Direct or Resultant ("Total Loss Risks"), as

Millinery, artificial flowers, florists' stocks, contents of green or hot houses, stocks of birds and rare animals, high grade art stocks and paintings, contents of cold storage warehouses, etc.

Indefinite. (D. 5.)

Consisting of mixed or changeable stocks of differing degrees of ageability of which the average damageability should be estab- ed by personal estimate, as

Department stores, general storage warehouses, receiving commission houses, etc.

NOTE: Definite classes which by themselves would take one of the ular grades (i. e., D. 1 to D. 4, inclusive) when found in combined ks may be classed as to damageability by taking the average ageability from Contents Tables in Brick Tariff.

d

Explanatory of Charges for Damageability.

The basis rates appearing in both brick and frame tariffs are established by assuming an estimate of hazard for a standard building without fire department protection. Municipal protection is divided in seven grades to conform to the recent classification by the Wester Union. The relative hazard of brick and frame buildings, under th extremes of metropolitan protection and no protection, as shown b tariffs in different states, averages closely to the following ratios:

Hazard of a frame building under metropolitan protection to its hazard without protection about..................66⅔%

Hazard of a brick building under metropolitan protection to its hazard without protection about..................55 %

With municipal protection as at present divided, the average decrease of hazard for each superior grade of protection, between the above extremes, is 8 per cent. for frames, and the successive ratios of the basis rates for frames would be found by discounting 100 by 8 per cent., this amount by 8 per cent., and so on for each grade until we reach the highest grade of protection. The same result is reached by successive discounts of 13 per cent. for bricks. But the established classification made it necessary to change the gradation slightly between grades 4, 4½, 5 and 6.

This process was adopted for establishing the basis rates under each grade of protection, all calculations being made upon 100, and changed from this by percentages. In the frame tariff the rate of contents is established from the standpoint of removability, as explained in Exposure Formulas.

In the Brick Tariff, the rate of contents is established with reference to damageability, through a differential added to the occupied building rate. This differential represents the relative value of fire department protection to contents as compared with its value to the building itself.

When a brick building is unprotected, the hazard of contents is admittedly greater than that of the building because of a reasonable certainty of salvage in the walls. This difference in hazard depends upon the classified damageability of the stock.

In computing the basic differentials upon which the Contents Tables in Brick Tariff were constructed, the scale of difference between th hazard of an unprotected building and its contents (assumed as a average of the differentials found in existing tariffs) is as follows, th scale being based upon $10 per $1,000 at risk:

Building	$10.00
Contents classed as D 1	11.00
Contents classed as D 2	12.00
Contents classed as D 3	14.00
Contents classed as D 4	16.00

Taking the above as a basis of computation, the value of fire de partment protection to each of the above is assumed to be as follows:

Building, each grade of protection reduces hazard	13%
Contents, D 1	5%
Contents, D 2	2%
Contents, D 3	1%
Contents, D 4	0%

These discounts applied to the hazard of building and content shown by the preceding figures produce the following table showin comparative hazard of building and contents under each grade o protection:

TABLE OF RELATIVE HAZARD.

Discounts.	1st	2d	3d	4th	4½	5th	6th
D 1 .... 5%	$ 8.62	$ 9.05	$ 9.50	$ 9.98	$10.36	$10.74	$11.00
D 2 .... 2%	10.86	11.08	11.30	11.53	11.70	11.88	12.00
D 3 .... 1%	13.32	13.45	13.58	13.72	13.82	13.93	14.00
D 4 .... 0%	16.00	16.00	16.00	16.00	16.00	16.00	16.00
Build'g13%	5.42	6.13	6.93	7.83	8.63	9.43	10.00

Subtracting the building hazard from the contents hazard of eac grade of damageability under each grade of protection, we have the fol lowing table of differentials between building and contents:

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TABLE OF DIFFERENTIALS.

	1st	2d	3d	4th	4½	5th	6th
D1........	$ 3.20	$2.92	$2.57	$2.15	$1.73	$1.31	$1.00
D2........	5.44	4.95	4.37	3.70	3.07	2.45	2.00
D3........	7.90	7.32	6.65	5.89	5.19	4.50	4.00
D4........	10.58	9.87	9.07	8.17	7.37	6.57	6.00

The above table shows the amount to be added to occupied building rate for *ground floor* contents for each $1,000 at risk, but it is necessary to increase the differential for contents not located on ground floor, and for this purpose a regular scale of increase is applied, the addition for basement and second story being increased one-half and the additions applied regularly to stories above the second.

The Contents Tables in Brick Tariff were computed by the method described upon the basis of 100, and tables 60, 65, 70, 75, etc., were constructed from the 100 table by percentage changes, so that the ratios of the differentials in each table with reference to each other are the same.

As a rule the table of differentials for Contents used should be of the same number as the table of basis rates; in other words, if a state is rated by Table of Basis Rates No. 75, Contents Table No. 75 should be used, though in states where the hazard of building and contents shows a closer approximation on account of inferior brick, or for any other reason, the differential may be reduced to any needed extent by using a lower table for contents than for the basis rates of building, using for example Table 80 basis rates and Table 70 for contents. The differentials established by Table 100 are probably large enough for any field, no matter how high a basis rate may be needed to secure adequate rates.

MATERIALS.

Materials, raw, wrought and in process, including the debris occasioned by industrial activities, are frequently more combustible at certain stages than at others, and when a variety of materials is used they should be classified by the most damageable stage and the most combustible material, unless the latter is so small in quantity or kept under such conditions, imposed by policy, that it may be considered negligible as a factor of hazard.

The combustibility and damageability of materials may be classified as directed for regular mercantile stocks.

ANALYSIS AND CLASSIFICATION OF CAUSES.

The miscellaneous activities found in mercantile buildings, either connected with stocks of merchandise or independent, are divisible into Inert and Active.

INERT.

An inert occupancy neither increases nor decreases hazard—the protection afforded by human presence being considered an offset to the increase in physical hazard caused by the occupancy.

Inert occupancies are as follows:

Banks.

Barber Shops (small, without baths, in upper floors of mercantile buildings for accommodation of inmates.)

Massage Parlors (without baths).

Offices, of professional and business men, architects, railways, insurance agents, etc.

Studios, of artists, teachers, etc.

Sleeping rooms (single).

Sample Rooms (small) of mercantile agents, no sales from stock, etc.

ACTIVE.

Active occupancies are divisible into:

1st. Traffic hazard, i. e., the hazard caused by employees and customers in the regular transaction of business connected with mercantile stocks, retail or wholesale.

2nd. Habitations, consisting of dwellings, flats, apartment houses, boarding houses, hotels, lodging houses, clubs, etc.

3rd. Rooms or halls used for assemblies or resorts—where people gather together for some common purpose aside from commercial or industrial activities

4th. Industrial or handicraft occupancies, consisting of all industrial activities found in mercantile buildings, either connected with stocks of merchandise or independent.

5th. Unclassed, embracing all activities which cannot be identified with any of the foregoing.

Scale of Charges for Causes.

Traffic Hazard.

Class.	*Charge for Traffic.*
C. 1.	3%
C. 2.	5%
C. 3.	10%
C. 3½.	20%
C. 4.	40%
C. 4½.	60%
C. 5.	80%
C. 6.	According to survey or conditions of policy.
C. 7.	Class as one of the above grades by judgment.

NOTE: The hazard of traffic as a cause is related to the combustibility of the medium upon which it acts, hence the above scale of charges is made proportionate to the classification of the stock with which it is connected.

Habitational Occupancies.

Apartment houses, dwellings or flats, with independent heating arrangements, with mercantile occupancies on grade floor, for each suite of apartments in excess of two, add	2%
Apartment houses, heated by steam or hot water, in care of janitor, with mercantile occupancies on grade floor, for each suite of apartments in excess of two, add	1%
Boarding houses above grade floor, not over 10 rooms, inert..	10%
Boarding houses, not over 15 rooms, add.................	20%
Boarding houses, 20 rooms or over, rate as Family Hotel.	
Hotels (family)	30%
Add for restaurant	20%
Add for laundry (steam)	20%
(See remarks under Transient Hotels.)	
Hotels (transient)	50%
Add for cooking	30%
Add for laundry (steam)	30%

No charge for bar or barber shop if connected with hotel.

When cooking or laundry in separate building, cut off by fire door or space, reduce charge according to circumstances.

Club buildings (metropolitan)	10%
Add for lodging	10%
Add for cooking	20%
Add for laundry (steam)	20%
Lodging houses, high grade roomers (see Boarding Houses).	
Lodging houses (low grade bed houses)	100%

NOTE: The charges in the preceding list should appear in the column of Causes (No. 1) and the classification of contents as to combustibility and damageability should appear in Columns 2 and 3 of Alphabetical List of Occupancies, Brick Tariff.

Assemblage or Recreational Occupancies.

Rooms, Lodge Rooms or Society Halls (no cooking), ›ance Halls (private) and Churches....................	3%
rd Saloons, Bowling Alleys, Gymnasiums, City Council nd Court Rooms.....................................	5%
ries or Drill Halls, Academies and Schools..............	10%

(public). For definition and schedule of Halls and Theaɜrs, see Brick Tariff.

IOTE: The above charges should appear in the column of Causes 1) and the classification of contents as to combustibility and geability should appear in Columns 2 and 3 of Alphabetical List, Tariff. In most cases the contents of these occupancies as to ıstibility are negligible, excepting theaters.

INDUSTRIAL OCCUPANCIES.

he factors of hazard in these occupancies are grouped as follows:

Materials, raw, wrought or in process, as media for the spread of combustion, classified in same manner as merchandise, (see page 11, Materials).

2nd. Labor (embracing the hazard of manipulation of materials in the making, handling, packing, shipping, etc.)

3rd. Heat producing or utilizing devices.

4th. Unclassed, consisting of recognized factors of physical hazard which cannot be identified with any of the foregoing

LABOR.

NOTE: In the alphabetical occupancy lists in brick and frame tariffs when the words, "*Labor*" or "*Additional Labor*" appear with a given occupancy their meaning is to be taken as follows:

Labor signifies that the minimum charge from the following labor table plus the charge for additional hands should be made according to the combustibility of occupancy.

Additional Labor signifies that the minimum labor charge appears in column 1 of the alphabetical list and only the charge for additional hands should be made.

a. In establishments where the number of hands is largely increased during certain seasons the average of the excess hands may be estimated accordingly. If, say, 100 additional hands employed during three months of the year the estimate may be made for an average of 25 excess hands. Estimates of labor should be under rather than over the actual average to prevent frequent claims for rate reductions.

b. When the average number of hands is between two numbers in the table charge should be made by the nearest number.

c. When more than one occupancy in a building, the total charge for labor should not exceed the maximum labor charge for occupancy of highest combustibility, plus the sum of the minimum labor charges for the other occupancies.

d. When workmen are engaged in manipulating the stock itself or materials not more hazardous, labor should be charged in conformity with the classification (as to combustibility) of the stock.

When the materials manipulated are, or (through manipulation) become, more hazardous than the stock, but are in quantities too small to establish the classification of the entire stock, the charge for labor on these materials should be made according to their combustibility (See Materials.)

LABOR TABLE.

In frame buildings the minimum charges for labor should be C. 2.

	C 1.	C 2.	C 3.	C 3½.	C 4.	C 4½.	C 5.
Minimum Charge. 5 hands or under......	5%	10%	15%	25%	40%	60%	80%
Additional Labor. 5 additional hands....	4%	5%	6%	7%	9%	11%	13%
10 " "	8%	10%	12%	14%	18%	22%	26%
20 " "	12%	15%	18%	21%	27%	33%	39%
30 " "	16%	20%	24%	28%	36%	44%	52%
40 " "	20%	25%	30%	35%	45%	55%	65%
60 " "	24%	30%	36%	42%	54%	66%	78%
80 " "	28%	35%	42%	49%	63%	77%	91%
100 " "	32%	40%	48%	56%	72%	88%	104%
125 " "	36%	45%	54%	63%	81%	99%	117%
150 " " ...	40%	50%	60%	70%	90%	110%	130%
175 " " ...	44%	55%	66%	77%	99%	121%	143%
200 " "	48%	60%	72%	84%	108%	132%	156%
250 " "	52%	65%	78%	91%	117%	143%	169%
300 " " .... and over.	56%	70%	84%	98%	126%	154%	182%

d

HEAT PRODUCING OR UTILIZING DEVICES.

(The minimum charge for any heat device in a frame building should be C. 2 unless otherwise indicated.)

These are grouped under the following heads:

1. Motive Power.
2. Hand or movable furnaces.
3. Fixed furnaces.
4. Dry rooms.
5. Unclassed.

NOTE: When open furnaces or lights of any kind are found in a room where inflammable vapors, gases, dust, lint or flyings exist; in the absence of specific charge in Alphabetical Occupancy List, the highest punitive after-charge should be made for unsafe arrangement in addition to the charge found in any of the following tables for furnaces, dry rooms, motive power, forges, cauls or any other heat device.

MOTIVE POWER.

Table of Charges for Power Devices.

The charges in following table apply to devices in main building, not enclosed or separated from the contents by which they are surrounded. In practice heat devices are not permitted in the open with merchandise of a higher grade of combustibility than say C. 4, and when so found the punitive charge indicated by above note in italics should be applied in addition to the charge indicated by following table. All steam power devices should be located on and surrounded by an approved non-combustible floor to a safe distance. In the absence of this each charge should be doubled for unsafe arrangement:

Class	Electric Motor		Gas or Hot Air	Kerosene, (Standard) Gasoline or Natural Gas Engines	Steam Power			
	Pattern				Upright B & E		Stat'nry B & E	
	Encased or Induction	Not Encased			Brick Stack	Metal Stack	Brick Stack	Metal Stack
C 1	0%	0%	5%	10%	20%	30%	40%	60%
C 2	0%	10%	10%	15%	30%	40%	50%	70%
C 3	0%	15%	15%	25%	40%	50%	60%	80%
C 3½	0%	20%	20%	40%	50%	60%	70%	90%
C 4	0%	30%	30%	50%	60%	70%	80%	100%
C 4½	0%	40%	40%	60%	70%	80%	90%	110%
C 5	0%	50%	50%	70%	80%	90%	100%	120%
C 6	0%	According to survey or by policy conditions.						
C 7	0%	Class as one of above by judgment.						

NOTE *a:* Increase above charges in the steam power columns ten points for each floor pierced by each metal stack, or for each additional metal stack through roof, unless fire proof.

b: Motors of one horse power or less may be treated as negligible, in premises that are free from inflammable vapors, dust or flyings.

Open motors enclosed in approved case or cabinet; or in separate room with self-closing doors, used for no other purpose, may be treated as encased.

When motors or dynamos are in boiler and engine room charge may be waived, otherwise charge for dynamos as motors.

c. The charges for gasoline engine in preceding table provi standard arrangement. When the arrangement is not sta charge should be increased by the percentages found in the fol Table:

1. With flame igniter, or with tank outside but too close...
2. With tank inside (pump feed) or with outside gravity tar
3. With tank inside (gravity feed).......................

(See memo. of standard arrangement, page 17.)

1. *Additional Devices.*
   - *a.* For each occupancy in building with more than one device increase charge in preceding table one-fifth for ea vice over one up to double the charge. If electric moto: one-fifth the total charge for the others, as stated i ceding table, to the charge for most hazardous, as esta by note *b*, page 15, up to double the charge for most haz
   - *b.* When more than one kind of power device found in occupancy, charge for the most hazardous, plus one-fif charge for each of the others according to its nature, double the charge for the most hazardous.
2. *Location.* Except with electric motors (see note *b*, preceding the following ratios of the charges in preceding power table be applied when device is not in the open in Main Building. In a separate room in main building, or in an addition, it m used for no other purpose, and if device is steam power th must be non-combustible to a safe distance or net charge dou

LOCATION TABLE

LOCATION OF DEVICE	MAIN BUILDING		
	Brick		Frame
	Steam Power	Other Power	Steam Power
In Room			
a. With combustible partitions or ceiling................................. (Charge not to be less than for (C 1) in the open, if in brick, or (C 2) if in frame building.).................	80%	50%	90%
b. Walls and ceiling fireproof or device under brick or stone sidewalk, not cut off by fire door..................	40%	25%	50%
In Power House			
c. Frame, Iron-clad or Brick-veneered, not cut off or with unprotected openings over its roof..............	70%	40%	80% (If communic detached le 10 feet)
d. Brick or skeleton Iron-clad, not cut off or having unprotected openings over its roof........................	50%	30%	60% (If communic detached le 5 feet)
e. Fireproof, not cut off by fire door.....	30%	0%	40%

NOTE 1. When a frame or iron-clad power house is sep from main building by space, the area charge of power roon power charge as reduced in above table opposite *c* or *d* should duced for space as follows:

If main building is frame or iron-clad, reduce for space l posure Tables (see Exposure Formulas).

If main building is brick, reduce for each 5 ft. space by the room table, page 29, Appendix.

NOTE 2. When a power house is rated separately, char power devices should be based upon (C. 1), if brick or firepr (C. 2) if frame. iron-clad or brick-veneered.

Memoranda of Standard Arrangements for Gasoline Engine.

Supply Tank, to be outside underground and not less than 5 feet from building.

Auxiliary or Inside Tank, if any, not over one quart capacity, not placed on, in or under engine, and so arranged that when the supply is closed a drain into the return pipe will be automatically opened.

Piping, from outside tank to engine to be so arranged that gasoline will drain back to supply tank.

Feed, from supply tank to be by pump only.

Ignition of Engine to be by electric spark.

Location. Engine to be located where it will be free from inflammable flyings.

The term gasoline to include all the lighter products of petroleum by whatever name known.

Memoranda of Standard Arrangements for Stationary Boiler and Engine.

NOTE: Fixed boilers and engines for producing heat, or power for elevator service, are included in basis rate which embodies the hazard of heating in any manner not specially provided for in established rules and charges.

When industrial processes needing power are supplied from a general power plant connected with building, the arrangement of boiler and engine should conform to the following:

Protected Boiler. To be encased with brick boiler walls, arched brick over boiler, or, in lieu, the top of boiler to be covered with approved non-combustible and non-conducting material.

Protected Building Walls. In proximity of boiler to be brick, stone or metal clad, ceiling over boiler (if wood, or lath and plaster) to be lined with approved non-combustible material.

Floor. To be of brick, cement or earth.

Cut Off: Approved Fire Door.

Fuel: Coal, Gas or Petroleum (last named to be handled and stored in conformity with rules promulgated by governing bodies).

MINIMUM SPACES BETWEEN BOILER AND BUILDING WALLS.

	BUILDING WALLS.	
	Protected.	**Unprotected.**
Boiler, protected	**If brick, none.** **If metal clad, 12 in.**	**18 inches.**
" unprotected	**18 inches.**	**36 "**

SPACES BETWEEN BOILER SURFACE AND CEILING.

	CEILING.	
	Protected.	**Unprotected.**
Boiler surface, protected	**12 inches.**	**36 inches.**
" " unprotected	**36 "**	**48 "**

Space between smoke jacket or metal stack and wood work not less than 18 inches.

When arrangement does not conform to the above standards an "After Charge" should be made for unsafe arrangements according to gravity of defects.

HAND OR MOVABLE FURNACES.

The hazard of movable furnaces is proportionate to the combustibility of the stock or materials with which they are used. (See following Table of Charges.)

FIXED FURNACES.

Are grouped as follows:

A. Furnaces connected with ovens, as bake-ovens, china firing ovens, annealing ovens, japanning ovens, coffee roasting ovens, etc.

B. Furnaces connected with open kettles or vats for heating substances liable to combustion, as in candy making, meat rendering, culler making in bakeries, etc.

C. Furnaces for motive power or for producing heat to be used in dry rooms in industrial plants.

D. Furnaces for heating or lighting buildings, one or both, including cooking stoves or ranges and laundry furnaces.

E. Unclassed.

NOTE: As the heating of buildings is a universal necessity, with the exception of buildings used for the storage of substances not affected by low temperatures, it has been the practice in all tariffs to establish a basis rate for each class upon the assumption that the building contains safely arranged heating devices Such charges as have usually been made for heating, elevating, etc., have been for the use of unsafe fuel (as gasoline, acetylene, etc.) and for defects in arrangement. It is questionable whether analysis should not be applied to these important factors of hazard, but the example of other tariffs is followed, and under head "D" as defined no charge is made for furnaces used exclusively for heating and elevating if safely arranged.

TABLE OF CHARGES FOR FURNACES.

In the following table, Hand or Movable Furnaces embrace fire, glue and soldering pots, crucibles, cupels, ironing furnaces, busheling stoves and other movable heat devices using *coal or charcoal* for fuel.

When located in frame building the minimum charge for a furnace of any kind should be C. 2.

Class.	Hand or Movable.	Fixed or Stationary.			
		Independent.	Connected with		Ea. Add'l Kettle with same Furnace.
			Ovens.	Kettles.	
C 1	5%	5%	10%	15%	3% Up to double the Kettle charge.
C 2	7%	10%	20%	25%	5%
C 3	10%	15%	25%	30%	6%
C 3-½	12%	25%	35%	45%	9%
C 4	16%	40%	50%	70%	14%
C 4-½	20%	50%	60%	80%	16%
C 5	25%	60%	70%	100%	20%
C 6	According to survey or policy conditions.				
C 7	Class as one of above grades by judgment.				

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Rules for Both Fixed and Movable Furnaces.

1. ***Fuel,*** other than coal or charcoal.
   - *a.* When ***gas or electricity*** is used, charge may be reduced one-half, or if movable furnace, waived at discretion of rater. This does not apply to natural gas, for which regular charge should be made by preceding table.
   - *b.* ***When crude petroleum or any of its products*** **(except U. S. standard coal oil) is used, double all charges in preceding table. and if gravity feed, increase the double charge 30 points for fixed or stationary furnaces.**
2. ***Additional Furnaces.***
   Increase charge one-fifth for each furnace over one up to double the charge, for each occupancy with more than one furnace.
   (When various kinds of furnaces using the same, or different kinds of fuel, are found in same occupancy, charge for most hazardous furnace plus one-fifth the charge for each of the others according to its kind of fuel, up to double the charge for the most hazardous.)

Rules for Fixed Furnaces.

3. ***Not on approved non-combustible floors*** to a safe distance. Make double charge except when electricity is used for fuel. (If floor is wood, fire proofed, apply same increase if without approved air ventilation).
4. ***Metal Stack*** passing through ceiling or roof (not fire proof) 10%.
   Increase charge ten points for each floor pierced by each stack, or for each additional stack through roof, unless fire proof.
5. ***Kettles.***
   - *a.* ***Heated by furnace.*** If contents are non-combustible, make the charge for an independent furnace and waive charge for additional kettles.
   - *b.* ***Heated by steam.*** Make charge for an independent furnace as on non-combustible floor. If contents of kettle are non-combustible charge may be waived.
6. ***Location.*** The charges for Fixed or Stationary Furnaces, in the preceding Furnace table, apply to these furnaces when in the open in main building. When not so located, consult Location Table, page 16. In making reductions for location, fixed furnaces should receive the same credit as Steam Power Devices.

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DRY ROOMS.

The charge for dry room is independent of the charge for furna which supplies it with heat unless furnace or stove is located insi of dry room.

CHARGES.

Arrangement No. 1.

Floors, walls and ceiling non-combustible, with approved ir door, heated by steam, water or hot air pipes.

Combustibility	Maximum Temperature		
	Under 125°	125 to 200°	200 to 300
C 1	5%	10%	15%
C 2	10%	15%	20%
C 3	15%	20%	30%
C 3½	20%	25%	40%

Metal doors may be waived when contents of dry room class C1 or are so small in quantity as to be negligible.

Arrangement No. 2.

Floors, walls and ceilings metal clad with metal or metal cl door. Heated by steam, water or hot air pipes.

Combustibility	Maximum Temperature		
	Under 125°	125 to 200°	200 to 300°
C 1	10%	20%	60%
C 2	15%	40%	80%
C 3	20%	60%	100%
C 3½	25%	80%	120%

Metal or metal clad door may be waived when contents class C1 or are so small in quantity as to be negligible.

Arrangement No. 3.

Floors and ceiling wood, walls, wood, lath and plaster or bric Heated by steam, hot water or air pipes.

Combustibility	Maximum Temperature	
	Under 125°	125 to 200°
C 1	15%	40%
C 2	25%	70%
C 3	40%	100%
C 3½	60%	150%

If a dry room is heated by inside stove, furnace, torch or op gas jets, double the charge under any of the preceding arrangemen *Also see note under Heat Producing or Utilizing Devices.*

If more than one dry-room, in same occupancy of a building, i crease charge one-fifth for each additional up to double the charge.

d

FORGING HAZARD (Hand).

(As found in blacksmith, wagon, machine and repair shops).

NOTE: There is no appreciable difference between the hazard of a fixed and a movable forge except that the latter is liable to be upset or to be placed in rooms where combustible materials tend to increase the danger of fire. The principal hazard of forging lies in flying sparks, and this danger is as great with the movable as with the fixed forge in proportion to the time actual forging is done. The fixed forge is liable to be in constant use, while the movable forge is, in theory, at least, for occasional use. Custom has established a wide difference in the charge, however, which is possibly justified by the relative time actual forging is done.

When forging is done in a communicating room used for no other purpose, the anvil should be located where sparks cannot fly through open doorways and ignite combustible materials.

On the assumption that movable forges in small repair and machine shops are used but a small part of the time, the following scale of charges for each forge may be applied when arrangement is approved.

Fixed Forges.

(Floor to be non-combustible.)

In straight iron workers such as blacksmith shops, etc....	40%
In iron and wood workers such as blacksmith and wagon shops, etc.	60%

Increase charge one-fifth for each additional up to double the charge.

Movable Forges.

In rooms with contents classing as C. 1 or used for no other purpose.

a. Dirt or other non-combustible floor and brick walls......	10%
b. Wood floor or in room with contents classing not higher than (C. 2)..	20%
c. In rooms with contents classing not higher than (C. 3½).	30%

Increase charge for each additional forge one-fifth up to double the charge.

If forges are in rooms where the combustibility of materials classes higher than C. 3½ or anvil is located where there is a possibility of sparks flying through open doorway into such room, *see note under Heat Producing or Utilizing Devices.*

DRY HEAT BOXES OR CAULS.

Ranging from small box-like compartments of two to three feet square to the dimensions of ordinary dry rooms.

On account of the difficulty of investigating the interiors, and the accumulation of dust and debris, these devices are often more hazardous than regular dry rooms.

The only approved arrangement is that in which the caul or hood which constitutes the compartment is metal, or metal lined, the bottom being composed of the steam pipes which furnish the heat. This arrangement allows the dust and debris to drop through the steam pipes to the floor, where it may be swept away.

The hazard of these devices, like that of Dry Rooms, is proportionate to the combustibility of contents.

When constructed as above described charge as follows:

	——Caul or Hood——		
	All Metal.	*Metal Lined.*	*Wood.*
C. 1.	2%	5%	10%
C. 2.	3%	10%	20%
C. 3.	5%	15%	30%
C. 3½.	8%	20%	40%
C. 4.	10%	25%	50%
C. 4½.	15%	30%	60%
C. 5.	20%	40%	80%
C. 6 and 7 at discretion.			

When caul or heat box is heated by inside stove, furnace, lamp or torch, charge should be doubled under any of the above arrangements (See also note in italics, page 15.)
Increase charge one-fifth for each additional up to double the charge.

STEAM CHESTS.

Embracing all small compartments with moist heat for bending, sweating, sizing, etc. When supplied by exhaust steam, charge may be waived.

When the source of heat is inside the compartment, as gas, coal oil lamp, etc., the charge should be made for unsafe arrangement as an after-charge, and in no case less than one-half of the charge for dry heat boxes of like construction.

GENERAL REMARKS.

SUPPLEMENTARY TO CLASSIFICATION OF OCCUPANCY.

The preceding classification of occupancy was the basis upon which the Brick Tariff was constructed, and was subsequently used as a guide in the reconstruction of the Frame Tariff with this edition. In the remarks preliminary to the classification, it was stated that it would be found useful by raters in estimating the hazard of the miscellaneous risks, for which ordinary tariffs did not provide. Since that time the Appendix has steadily grown in use among raters, who have complained, however, that with certain classes, especially under the higher grades of protection, the estimates made up from the charges provided in the classification were too low. The cause of this has been plain, but a remedy has not until recently suggested itself. It is obvious that in certain occupancies of high combustibility the spread of fire is so rapid that the destruction is largely accomplished before any fire department can respond.

In the first edition, an attempt was made to provide for this by the expedient of rating all these classes from the basis rates of 6th class protection. This, however, resulted in making rates under city protection too high. The solution of the difficulty seems to lie in the fact that fire protection, while not entirely without value with these quick-burning risks, is of smaller value than with ordinary risks, and it is a question of determining the proper relativity of municipal protection. This principle was found available in constructing the basis rate tables for Frame Tariff as well as Contents Tables in Brick Tariff, which were built upon the theory that municipal protection was worth less to frame buildings than to bricks, and less to the contents of brick buildings than to the buildings themselves. In computing the Frame basis rates, the allowance for protection was about two-thirds that allowed for brick buildings, and careful tests have shown that acceptable results will be obtained by treating these rapid-combustion risks as entitled to one-third less credit for municipal protection allowed for brick, or one-half less than allowed for frame buildings of ordinary occupancy.

This result may be reached by increasing the basis rates in either brick or frame tariff by a percentage and treating the total as a new basis rate, from which all the charges should be figured as for an ordinary risk. The process is applicable whether the risk be brick or frame, and it is so simple that it hardly seems necessary to construct special basis rate tables for these risks.

The scale of additions is as follows:

	Bricks.	*Frames.*
Under 1st class protection increase Basis Rate	30%	20%
Under 2nd class protection increase Basis Rate	25%	15%
Under 3rd class protection increase Basis Rate	20%	10%
Under 4th class protection increase Basis Rate	15%	5%
Under 4½ class protection increase Basis Rate	10%	*
Under 5th class protection	*	*

(The asterisks indicate that the Basis Rate of a sixth class town is to be used.)

BRICK BUILDINGS WITH WARE-ROOMS OR ADDITIONS.

(Frame, Iron-Clad or Brick-Veneered.)

In small towns, few hazards are more common or more complicated than those found among brick or stone buildings with mutually exposing frame, iron-clad or brick-veneered ware-rooms.

Existing tariffs are either silent upon the subject or the rules they contain are so crude as to be worthless in actual rating. The importance of the subject demands an attempt, at least, to establish some uniform and practical system of dealing with the ware-room problem, which without doubt presents the most difficult phase of fire rating.

In the first edition of this tariff the plan was suggested of measuring ware-room exposures by treating each main building and its communicating ware-room as a composite risk, and while this produced approved results so far as it went, it was limited in its utility, and subsequent experience has demonstrated that no rules can be formulated possessing the universality necessary for measuring the complex exposures found among these risks, without separating the ware-room from its main building and treating each as a distinct factor of exposure.

As the urgent necessity for another edition does not permit of a more careful consideration of the problem, the following study is offered for testing purposes in the hope that the suggestions brought forth by its practical application may develop a better understanding at least, and possibly point the way to some consistent method of measuring ware-room hazard.

In Brick Tariff the following charges for ware-rooms appear:

WARE-ROOMS

(Frame, Iron-Clad or Brick-Veneered.)

"*When ware-room or addition communicates with main building,* it should be figured as an area charge, to the main building, by the following percentages of the basis rate of main building for each one hundred square feet of ground floor area of the ware-room.

11*a*. If ware-room is frame or iron-sheathed frame, add 5 per cent. (Maximum charge not over 80 per cent.)

11*b*. If ware-room is skeleton iron-clad or brick-veneered, add 3 per cent. (Maximum charge not over 50 per cent.)

a. When ware-room is two stories, increase area charge one-half up to maximum.

b. When more than one ware-room communicating through unprotected openings with an omnibus building, charge for area of all, not to exceed maximum.

c. All ware-rooms communicating through unprotected openings, take the same rate as the main building after area charge has been added.

d. All ware-rooms cut off from main building by space or by a parapet fire wall, with all openings, if any, protected, should be rated specifically as ware-rooms.

As the preceding rules constitute the first attempt to estimate Ware-room Hazard through area charges, it is proper to explain the reasons which prompted this method of treatment.

If we assume a brick and a frame building standing side by side, of like size, occupancy and value, the relative rates of the two buildings outside of exposure, being, say as 100 to 150, the combined rate of the two would be 125. As a matter of fact this is about the mean relation between brick and frame rates throughout the country. For example, let us assume a situation as described below:

Frame, values,	$2,000,	rate say $1.50,	premium $30.00
Brick, values,	2,000,	rate say 1.00,	premium 20.00
Total values,	$4,000,		$50.00

The above would make an average rate of $1.25, and the rate of the brick building alone being $1.00, this would indicate an increase of 25 per cent. in its rate, but this ratio would be changed by the relative values of the two risks, which, with like occupancies, would be established by their relative size. If we assume a value in frame building of $3,000.00, and in brick of only $1,000.00, the average rate would figure out $1.37½, showing an increase of 37½ per cent. in rate of brick; or, on the other hand, if these values were reversed, the average rate would be $1.12½, showing an increase of but 12½ per cent. in rate of brick, while if (as is not infrequently the case), the values in the brick were as ten to one, compared with frame, the increase in average hazard of the brick and its contents would be less than five per cent.

From the foregoing it will be seen that the average rate of two risks, *with like occupancies,* would vary in proportion to their relative dimensions, the range of variation lying between the rate of a brick and that of a frame. The ordinary ratio of the rates of brick and frame, with mercantile occupancy, being about as 100 to 150, the range of variation would be from nothing up to 50 per cent. of the rate of brick. But as this rate is built up of charges added to a basis rate which, in the average of unexposed brick risks is about 70 per cent. of the occupied rate, the maximum range compared with basis rate would be from nothing up to about 80 per cent. of the basis rate of brick.

The above computations have been made upon the assumption of two risks separated by a fire wall with two ownerships. If we cut a doorway between, and assume the two as one risk under one ownership, we have the exact hazard found in composite risks, consisting of a brick or stone main-building, with a frame ware-room. Under the law stated, page 3, the opening of communication between the two buildings would cause the excess of hazard found in the frame building to spread over the values in both buildings, making both rate as frame, but against this we have the reduced hazard, physical and moral, resulting from one ownership and occupancy instead of two, which, under the consensus of opinion as to moral hazard, and the average of charges for additional occupancies, might be considered equal to about 30 per cent., which is practically an equivalent for the increased hazard caused by unprotected openings between the two buildings.

In all tariffs it is usual to establish a differential between small and large mercantile buildings by an area charge. If a communicating addition of a building is composed of more combustible materials than the building itself, it is in strict harmony with this area charge to assess the area of the more combustible part by an area charge based upon a higner scale

This line of reasoning led to the treatment of ware-room hazard through an area charge, in which the maximum for any one ware-room would not make the rate of its main building higher than that of a building of like occupancy with itself and of like structure with its ware-room.

But it is necessary to consider ware-rooms from two standpoints:

1st: With regard to the hazard they impart to their own main buildings.

2d: With regard to the exposure they impart and transmit to and from other buildings.

The distinction between these two functions is, at times, difficult to discern or define, for they possess many features in common. It is, nevertheless, important to establish a clear dividing line between the ware-rooms as a part of the hazard of the main building to which they belong, and ware-rooms as a part of exposure to and from this main building.

WARE-ROOMS.

(In their relations to their main buildings.)

If we assume a communicating ware-room of, say 400 square feet, connecting through unprotected openings with a main building of which the basis rate is 70 cents, the area charge of the ware-room would be 20 per cent. of 70 cents or 14 cents.

If this ware-room be removed, say 10 feet from main building, consistency demands that its area charge be reduced for space on the scale of reduction shown by General Exposure Table for the exposure of a frame to a B. 1 building (i. e., ¼ for each ten feet), which would make the charge 14 cents less ¼, or 10 cents. If the ware-room were treated as occupancy when communicating, and as exposure when separated by space, it would be necessary to figure the deduction for space from the standard ratiq of its area charge, say 50 per cent., which would make the net charge, after reduction for space, only 5 cents. This would clearly create an illogical gap in what ought to be a continuum, for the hazard of the ware-room to its main building diminishes in exact proportion to the size of clear space between the two, and this holds good whether the main building be protected against the ware-room by standard cut-off or not.

When the main building is cut off, however, the ware-room clearly does not impart as much of its hazard to its main building as it would if not cut off, hence its full area charge must be diminished by some ratio of itself for the cut-off Assuming this ratio to be diminished to three-tenths for ware-rooms described in charge 11*a*, page 24, and to two-tenths for ware-rooms described in charge 11*b*, and that deductions for space between ware-room and its main building should be on about the scale used for exposures of like hazard in General Exposure Table, it becomes possible to construct the following:

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TABLE.

Showing area charge of ware-rooms to main buildings and reductions for space.

	Ware-rooms.	
	Frame or I. C.	B. V. or Skel. I. C.
Main building, *not cut off*..	Full area charge.	Full area charge.
Reduce for each 5 ft. space	One-eighth.	One-sixth.
Main building, *cut off*.....	Three-tenths of area charge.	Two-tenths of area charge.
Reduce for each 5 ft. space	One-fourth.	One-third.

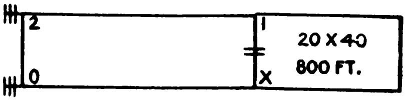
NOTE:—By "cut-off" is meant that the wall of main building facing or communicating with ware-room is provided with standard fire doors and shutters, and, if not at least one story higher than ware-room, that it is provided with a standard parapet.

The preceding table shows four possible combinations in the relations of a ware-room to its own main building, i. e.,

Cut off; not cut off.
Attached; detached.

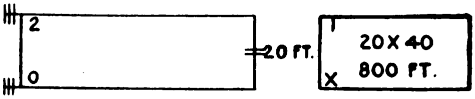
These combinations appear in diagrams 1, 2, 3 and 4 which follow, the basis rate in each diagram being assumed as 70 cents.

Diagram 1.



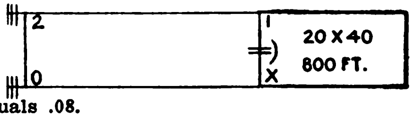
The area charge in above is as follows:
800 ft. x 5 per cent. equals 40 per cent. x .70 equals .28.

Diagram 2.



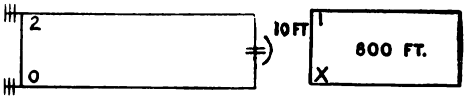
Area charge .28 reduced four-eighths for 20 ft. space equals .14.

Diagram 3.



Area charge .28 x .3 equals .08.

Diagram 4.



Area charge of diagram 3, .08, reduced two-fourths for 10 ft. space equals .04.

NOTE:—The full area charge of the ware-room itself in each of the preceding diagrams is 28 cents, which is reduced to 14 cents, 8 cents and 4 cents in making the rates of the main buildings in diagrams 2, 3 and 4. These amounts may be referred to as absorbed area charge to distinguish them from the full area charge which, being a percentage of the basis rate, is the same in each diagram. In figuring exposures to other buildings the basis of the calculation is always the full area charge.

WARE-ROOMS.

(In their relations to exposures.)

Having considered ware-rooms in relation to their main buildings, it remains to consider their influence with reference to exposures.

It is evident that the ware-room participates with its main building in these exposures, and that there must be some scale of relativity in their mutual participation. There are two ways of establishing this scale:

1st. By treating the main building with its ware-room as a composite hazard.

2nd. By treating the two as distinct factors of exposure.

Under the first plan we are met by so many possible combinations of hazard, caused by the size of ware-room, cut-offs, and clear spaces, that we are forced to consider the second alternative in order to secure anything approaching a comprehensive method of dealing with the endless variety of compound exposures found among these risks.

In separating the main building from its ware-room and treating each as an independent factor of exposure, it should be borne in mind that the area charge of the ware-room to its own main building is a substitute for exposure, and when this area charge has been added to main building the ware-room has contributed its quota to the hazard and should not again be assessed for exposure to its main building. Hence, with reference to absorbed exposures, the only function of the ware-room is to serve as an area of combustion in transmitting to its main building the exposure from other hazards.

With reference to radiated exposure, however, the ware-room not only radiates its own exposure but transmits the radiated exposure from its main building. It is evident that the ware-room itself cannot radiate more hazard as exposure than it imparts as an area charge to its own building, hence its area charge should be taken as the basis of the calculation in lieu of the usual individual rate, the standard ratio of area charge to be the same as if it were an individual rate.

To recapitulate: Buildings with ware-rooms as described whether communicating, cut-off or separated by space radiate exposure as two distinct buildings, the ware-room radiating its own exposure and transmitting that of its main building, while with reference to absorbed exposure, the ware-room, as an area of combustion, simply serves to transmit to its main building the exposure from other hazards.

In these dual exposures, main building exposes main building as if intervening ware-rooms did not exist, so far as the exposure ratio is concerned, but the structure of intervening ware-room or ware-rooms determines the deduction for spaces, if any.

On the other hand, each ware-room radiates its own exposure to other ware-rooms, if any, which transmit the exposure so received to their main buildings. In the absence of other ware-rooms the ware-room radiates its own exposure direct to main buildings, besides transmitting the radiated exposure of its main building.

In figuring the exposure of buildings with ware-rooms to each other, the following table will be found convenient to use in lieu of General Exposure Table:

TABLE.

Showing mutual exposures of *building with ware-rooms* to each other.

Exposed.	Exposing.			
	Ware-room Part.		Main Bldg. Part.	
	Frame or I. C.	B. V. or Skel. I. C.	Not cut off or B 1.	Cut off or B 2.
(*Ware-room Part.*)				
Frame or I. C. (see chg. 11a)....	All	All	.3	.0
Reduce for each 5 ft. clear space..	1/10	⅛	¼	
B. V. or Skel. I. C. (see chg. 11b).	All	All	.2	.0
Reduce for each 5 ft. clear space..	⅛	1/8	¼	
(*Main Bldg. Part.*)				
Brick No. 1 (not cut off)........	.4	.3	.2	.0
Reduce for each 5 ft. clear space..	⅛	1/8	¼	
Brick No. 2 (cut off)...........	.3	2	.0	.0
Reduce for each 5 ft. clear space..	¼	⅛		
	(See Note 3.)			

NOTE 1: The word "All" in above table is to be taken as the standard ratio of full area charge of ware-room. The percentages in the table are all to be taken as ratios of this standard.

NOTE 2: Main Buildings with ware-rooms radiate exposure towards buildings without ware-rooms according to the "main building part" of preceding table as "cut off" and "not cut off."

Buildings without ware-rooms radiate towards main buildings with ware-rooms according to regular exposure tables, "not cut off" being equivalent to a B. 1 and "cut off" to a B. 2 building.

NOTE 3: A brick No. 2 (i. e., "cut off") does not radiate exposure, but its absorbed exposure should be figured from the area charge of its ware-room as above, plus 10 per cent. of the exposure load received by ware-room from other buildings, reduced for space, if any, between ware-room and its main building.

In figuring the exposures from main buildings with, to main buildings without ware-rooms, the General Exposure Table may be used, though as it is advisable to reckon with clear spaces as small as five feet, the denominator of the fraction may be doubled to show proportionate reduction for each five instead of each ten feet.

d

EXPLANATORY DIAGRAMS.

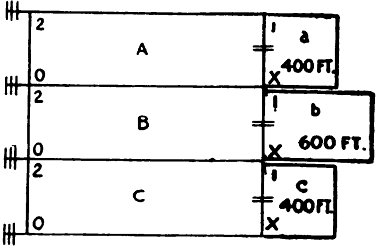
(Showing ware-room exposures.)

NOTE: In all the following diagrams each main building and its ware-room will, for convenience of reference, be designated by the same letter—capital for main building and small letter for ware-room. When necessary to refer to either separately its letter will be used. while the entire building composed of both will be designated by both capital and small letter.

Unless otherwise stated, the basis rate in all examples is 70 cents, with an assumed occupancy charge of 14 cents, making the individual rate of main building, without the area charge of its ware-room, 84 cents.

All calculations made as of sixth grade of municipal protection, with standard of radiated exposure 50 per cent., unless otherwise stated.

Diagram 5.



Main Building.			A	B	C
Occupied rate without area charge of ware-room..			.84	.84	.84
Ware-room, area charge..........................			.14	.21	.14
(Exposures.)					
A to others.........................	.08				
a "	.07	.15		.15	.15
B "	.08				
b "	.11	.19	.19		.19
C "	.08				
c "	.07	.15	.15	.15	
			$1.32	$1.35	$1.32

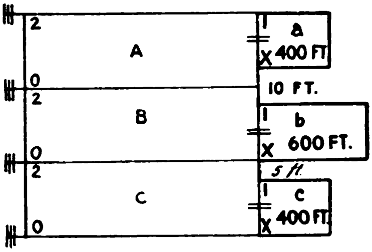
Each of the ware-rooms radiates the standard ratio (i. e., 50 per cent.) of its area charge to the others. This differs from exposures in ordinary frame rows in which additions would be made to the highest or nuclear rate.

The rate of each main building being 84 cents, its standard of radiated exposure is 50 per cent. of this amount, or 42 cents. The exposure of each main building to the others is to be determined by the structure of its wall which faces the intervening ware-rooms. The ware-rooms, if frame, simply serve as areas of combustion to transmit the exposure from each main building to the others. The exposure of B. 1 to B. 1 is two-tenths (see Ware-room Exposure Table), hence the exposure radiated by each main building to the others is 42x.2=.08. As reductions for spaces beyond ware-room are the same for this as for the radiated exposure of the communicating ware-room, it is proper, in order to save figures, to combine the two.

NOTE: In ordinary exposures the exposure from main building to main building would be that of B. 1 to frame and then of frame to B. 1, but ware-rooms simply transmit exposure from main building to main building.

d

Diagram 6.



In this diagram the risks are the same as in Diagram 5, except that spaces intervene between the ware-rooms themselves.

			A	B	C
Main Building			.84	.84	.84
Ware-room area charge			.14	.21	.14
(Exposures.)					
A to others	.08				
a "	.07				
		.15		.12	.11
B "	.08				
b "	.11				
		.19	.15		.17
C "	.08				
c "	.07				
		.15	.11	.14	
			$1.24	$1.31	$1.26

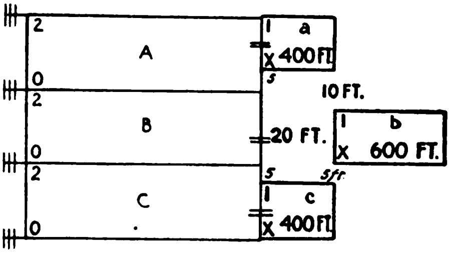
In the above the combined exposure radiated by *A a* is reduced for successive spaces of 10 and 5 feet between ware-rooms, the reductions being one-tenth for each 5 feet because the facing walls of ware-rooms are frame.

The exposure radiated by *B b* is reduced for 10 feet to *a* and 5 feet to *c*, and the exposure radiated by *C c* is successively reduced for spaces of 5 and 10 feet.

d

Diagram 7.

Same buildings as preceding diagrams, with middle ware-room 20 ft. distant.



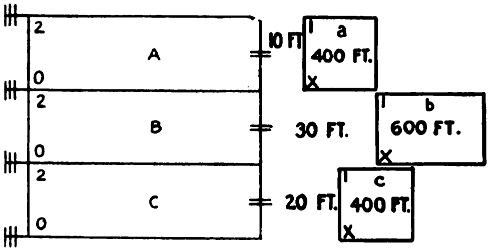
	A	B	C
Main Buildings	.84	.84	.84
Ware-rom area charges	.14	.21	.14
(Exposures.)			
A .08			
a .07			
——.15, reduced $\frac{2}{10}$ for space to *b* and this $\frac{1}{10}$ for space to *c*		.12	.11
B .00			
b .11			
——.11, reduced $\frac{2}{10}$ to *a* and $\frac{1}{10}$ to *c*	.09		.10
B diagonal to *A* and *C* through ware-rooms *a* and *c*, reduced ¼ for 5 ft. space to nearest wall of ware-rooms, i. e., .08÷2=.04—1=	.03		.03
C .08			
c .07			
——.15, reduced $\frac{1}{10}$ to *b* and $\frac{2}{10}$ to *a*	.10	.13	
	.36	.46	.38
Less ½ for space from *b* to *B*		.23	
		.23	
Main Buildings brought down	.84	.84	.84
Totals	$1.20	$1.07	$1.22

NOTE: *A a* and *C c* both expose the rear of *B* diagonally, with space of 5 feet to nearest wall of *B*. They also expose *B* by way of its ware-room *b*, which is the channel of greater hazard.

d

Diagram 8.

Same as preceding, with ware-rooms all separated from main building by different spaces.



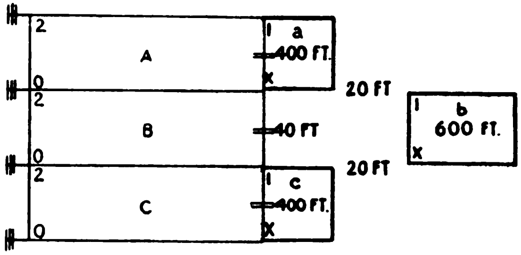
			A	B	C
Main Building			.84	.84	.84
Ware-room, area charge			.14	.21	.14
(Exposures.)					
.08 less ½ for space to *a*	.04				
	.07	.11		.11	.11
No exposure to *b*	.00				
	.11	.11	.11		.11
No exposure to *c*	.00				
	.07	.07	.07	.07	
Ware-room areas and exposure loads			.32	.39	.36
Reduced for space (*a* to *A* $\frac{2}{8}$, *b* to *B* $\frac{6}{8}$ and *c* to *C* $\frac{4}{8}$)			.08	.29	.18
Net (area and exposures)			.24	.10	.18
Main buildings brought down			.84	.84	.84
Totals			$1.08	$0.94	$1.02

NOTE: Elective exposures often make it necessary to select the hannel of highest hazard in the exposure of ware-rooms to main uildings as well as of main buildings to ware-rooms.

In this example, area of ware-room *b*, measured direct to main uilding, is reduced 6-8 by space, making net charge 5 cents. When this direct charge is reduced by space so that it is less than it would e, figuring ware-room *b* as an exposure through *a* or *c* as channel of highest hazard, this latter should be done bearing in mind that the tandard ratio of area charge should be used and exposure reduced ½ for diagonal from nearest ware-room to main building *B*. This vill be shown in next diagram.

d

Diagram 9.



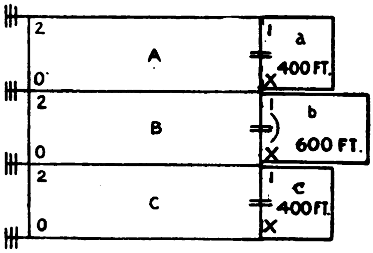
			A	B	C
Main Buildings			.84	.84	.84
Ware-room, area charge			.14	.21	.14
	(Exposures.)				
A	.08	Diagonal to *B*		.04	
		Less $\frac{1}{10}$ for 20 ft. to *c*			.05
a	.07	Diagonal to *B* (frame to B 1), i. e., .07×.4=.03÷2=		.02	
		Less $\frac{1}{10}$ for 20 ft. to *c*			.04
B	.08	Diagonal to *a* and *c*	.04		.04
b	.11	Less $\frac{1}{10}$ to *a* and *c*	.07		.07
		and .4 of this diagonal to *B*, i. e., .07×.4=.03÷2=		.02	
C	.08	Diagonal to *B*		.04	
		Less $\frac{1}{10}$ for 20 ft. to *a*	.05		
c	.07	Diagonal to *B* (frame to B 1), i. e., .07×.4=.03÷2=		.02	
		Less $\frac{1}{10}$ for 20 ft. to *a*	.04		
			.34	.14	.34
Main Buildings brought down			.84	.84	.84
Totals			$1.18	$0.98	$1.18

The area charge of *b* to its main building is *nil* on account of 40 ft. space, which space also eliminates exposures of *Aa* and *Cc* to *B* if measured around through ware-room *b*, hence it is necessary to follow the channel of greater hazard through ware-room *a* or *c*. In doing this ware-room *b* is to be treated as exposure instead of occupancy. As ware-rooms *a* and *c* are the same size and same distance from *b*, it is immaterial which is elected, but exposure of *b* should not be duplicated by figuring through both. The exposure transmitted is that of a frame ware-room to main building "not cut off", reduced one-half because diagonal.

d

Diagram *10.*

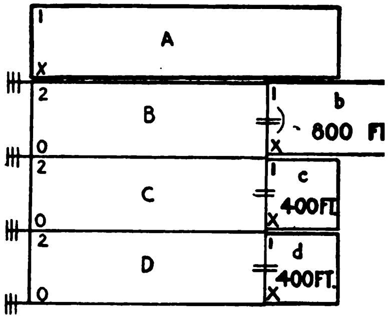
Same as Diagram No. 5, except that ware-room *b* is cut-off from *B*.



			A	B	C
Main Buildings			.84	.84	.84
Ware-room, area charge			.14	.21	.14
(Exposures.)					
A	.08				
a	.07	.15		.15	.15
B	.00				
b	.11	.11	.11		.11
C	.08				
c	.07	.15	.15	.15	
			.40	.30	.40
Supplementary calculation:					
b to *B*. .3 of 21		.06			
Exposure load 30c. × 10%		.03			
				.09	
Main Buildings			.84	.84	.84
Total			$1.24	$0.93	$1.24

d

Diagram II.



			A	B	C	
Main Buildings..........................			$1.50	$0.84	$0.84	$
Ware-room area charges..................				.28	.14	
(Exposures.)						
A 75c. × .4....................				.30	.30	
B Radiates no exposure.........						
b		.14	.14		.14	
C 42 × .2.....................	.08					
c	.07					
		.15		.15		
*15+4 to A................			.19			
D 42 × .2.....................	.08					
d	.07					
		.15		.15	.15	
*15+4 to A................			.19			
			.52	.60	.73	
(Supplementary)						
Area charge of *b* .28 × .3........	.08					
Exposure load of *b* .60 × 10%....	.06					
		.14				
Wall damage *A* to *B* (i. e., 10% of mercantile basis rate).....		.15		.29		
Main Buildings brought down..............			1.50	.84	.84	
Totals..........................			$2.02	$1.13	$.157	$1

As the brick buildings, not cut off *(C* and *D)* radiate two-ten of standard to other brick buildings and three-tenths to frame bui ing *A*, it is necessary to figure exposures to A separately as indicated the asterisks above, where half of the radiated exposure of main bui ing is added in figuring the exposure of *Cc* and *Dd* to *A*.

The absorbed exposure of *B* is more easily found by treating as not cut off in the main calculation and then computing its re exposure from the data thus obtained through a supplemental calcul tion.

d

WARE-ROOMS CONTAINING HAZARDOUS FEATURES.

When a *cut off or detached* ware-room contains a hazardous process or materials for which a charge appears in tariff, the charge should be combined with the area charge and treated as a whole in the same manner as an area charge, with reference to main building and exposures.

GROUND FLOOR CONTENTS.

In Exposure Formulas rules are given for dealing with the factor of removability of ground floor stocks in exposed B. buildings. These rules may be applied to the contents of buildings with frame, I. C. or B. V. ware-rooms as follows:

When ware-room communicates, add its area charge to main building to get its unexposed rate, then, after adding for contents (See Contents Tables Brick Tariff), figure exposure load of contents from the total of other exposures, excluding ware-room area charge.

When ware-room is cut off or separated by space from main building include its area charge with other exposures.

When ware-room is cut off by protected rear of main building, however, the exposure load of contents of main building should be one-half that of building itself, the same as contents of buildings exposed to wall damage.

OMNIBUS BUILDINGS WITH FRAME OR I. C. WARE-ROOMS.

When two or more ware-rooms belong to an omnibus building with more than one ground-floor occupancy, the area charge of all ware-rooms should be cumulative, though the area charge for all should be limited to the ratio of basis rate set forth in charges 11 a and 11 b, page 24.

If a ware-room is separated from main building by a clear space, deduction for this space should be made before including the area charge of this ware-room, though if it stands so close to another ware-room that a higher charge will accrue by adding its area charge (reduced for space, if any, between the ware-rooms), to that of the other ware-room, this should be done on the principle of following the channel of highest hazard.

The difference between ware-room hazard with omnibus buildings and with single occupancy buildings is that the entire area charge of all ware-rooms, reduced for space, if any, accrues to main building and that there is no exposure of ware-room to ware-room, as with single-occupancy buildings.

AVERAGE RATES.

The rates established by preceding examples apply only to main building and its contents, except when building and ware-room communicate through unprotected openings, in which event the rates apply to the entire premises.

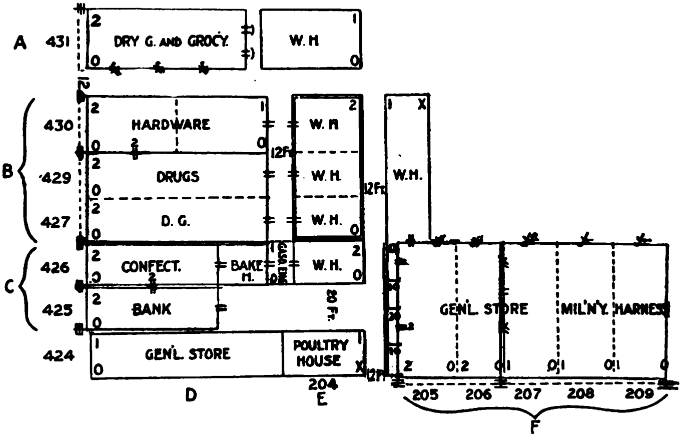
When ware-room is cut off by standard fire doors or shutters or is separated from main building by a space, the rate of ware-room itself should be established in the same manner as that of any similar building, with like exposures.

When necessary to publish an average rate of main building and ware-room, it should be estimated from the separate rates so established according to the rater's judgment as to the insurable values of each building and contents.

A Test Diagram.

The following diagram, copied from the map of a sixth class Illinois town, is an interesting illustration of the ramifications of ware-room exposures. In the local tariff of the town, the omnibus buildings B., C. and F. are rated at $1.25 each—considerably less than half of their true relative hazard.

The diagram shows the possibility of establishing an intelligent mathematical estimate of these heterogenous hazards, even when found in their worst "mix-ups," and granted that this possibility exists, fire underwriters owe it to the public and their own self-respect to apply the best obtainable mathematics to the work of evolving a rational method of dealing with these exposures. In all simple situations the rules laid down for ware-room exposures are so simple in their application as to be practicable for "the rank and file." If the application of these rules to complicated exposures is beyond the mathematical ability of the rank and file, they should be referred to experts, for there is no excuse for guess work when any rule, however difficult of application, will produce the truth or even a closer approximation to the truth.



(Explanatory of Figures on page 38.)

Brick buildings not cut off radiate .2 of standard to each other and .3 towards frames, hence it is necessary to make a separate calculation of the exposures radiated by *B, C* and *F* towards the frame group *(D E)*. The simplest way of making the calculations is to increase the radiated exposure of each of the main buildings one-half (i. e., by the ratio that .2 bears to .3) and join this to the radiated exposure of ware-room in each case before making reductions for spaces between the ware-rooms and *(D E)*. This is done where the asterisks appear by adding one-half of the radiated exposure of main building to that of ware-room. (See also Example 11.)

The radiated exposure of *B.* is reduced for 10 feet space before being joined to that of its ware-room, the reduction for other spaces being alike for both.

In order to save figures the exposures to ware-rooms of *A* and *B* are computed as if the ware-rooms communicated with main buildings, the reduction for space between ware-room and main building being made as a supplementary calculation. In the case of *A's* ware-room the reducton is made for both cut off and space.

Buildings *(D E)* expose *C* by wall damage and diagonally through the rear as well as through ware-room of *C.* The latter is selected because the channel of greater hazard.

The standard of radiated exposure used in this example is 40%.

		A	B	C	(D	E)	F
Main Buildings....................		$0.91	$1.42	$1.61	(1.50	2.25)	$1.24
Ware-room area charges...........		.49	1.44	.44			.52
(Exposures.)							
A .00							
a .20							
——.20, less $\frac{2}{10}$ to *b* and *c*.......			.16	.16			
and this less $\frac{2}{10}$ to *f* and $\frac{4}{10}$ to (*D. E.*)......................						.10	.13
B .57×.2=.11 less ½ for space to *b*=.06							
b .58=.64 less $\frac{2}{10}$ to *a* and *f*...		.51		.64			.51
*.64+3=.67 less $\frac{4}{10}$ to (*D. E.*)..						.40	
C .64×.2=.13							
c .17=.30 less $\frac{2}{10}$ to *a* and *f*		.24	.30				.24
*.30+6=.36 less $\frac{4}{10}$ to (*D. E*)..						.22	
D to *E*........................						.60	
(*D E*) (3.75×40%)=1.50×.4=.60×70% to *b* and *c* and this less $\frac{2}{10}$ to *a*.....................		.34	.42	.42			
.60 less ⅕ to *f* (iron clad part)							.48
F .50×.2=.10							
f .21=.31 less $\frac{2}{10}$ to *b* and *c*			.25	.25			
and this less $\frac{2}{10}$ to *a*		.20					
*.31+5=.36 less $\frac{2}{10}$ to (*D. E.*)						.29	
Totals		$1.29	2.57	1.91		1.61	1.88
(Supplementary)							
Area charge *a* to *A*, 49×.3.. .15							
Exposure Load of *a*, 1.29×10% .13							
	.28						
Less ¼ for space *a* to *A*..	.07						
		.21					
Less ¼ for space *b* to *B*....			.64				
			1.93				
Main Buildings brought down......		.91	1.42	1.61		2.25	1.24
Totals		$1.12	3.35	3.52	(	3.86)	3.12
Wall damage of (*D. E.*) to building No. 425 as follows:							
Mercantile basis rate 1.50×10%..	.15						
Exposure Load of nearest building (*D*) from *E*, 2.25×40% .90							
from *F f*...............29							
1.19 × 5%	.06						
				.21			
				$3.73			

MERCHANDISE OR PATTERNS IN STANDARD FIREPROOF VAULTS OR SAFES.

When written specific with 80% Reduced Rate Average or Coinsurance Clause, may be written at 50% of rate for same property in the open.

NOTE: The following specifications of the Chicago Board of Underwriters are published by consent of Manager H. H. Glidden.

SPECIFICATIONS FOR APPROVED VAULTS.

Vaults in buildings of non-fire proof construction to be made of self-supporting walls of brick laid in cement, and extending from the ground. Size of vault not to exceed 750 cu. ft. Walls to be not less than 12 in. in thickness. Top and bottom of vault to be water proof and made of brick or concrete arches of the same thickness as walls. (Arches may be sprung between steel beams if desired.) No wood top flooring to be used. Communications to vault to be protected on outer side of wall with approved vault iron doors and to be smoke proof, by closing against a rabbet at top, bottom and one side, hinge side of door to close into a groove. Steel plate to be at least 3-16 in. thick; door and wall frames to be of equivalent construction to the approved 3-16 in. iron fire door. Communications also to be protected by an iron door on the inner side of the wall, this door to be at least No. 14 U. S. gauge in thickness. Fixtures inside vaults to be of noncombustible material. No lights other than stationary electric incandescent lamps properly guarded to be installed inside vaults. Switch to be outside.

SPECIFICATIONS FOR APPROVED SAFES.

Approved safes to be made of an angle iron frame continuous at all edges, angle iron not to be smaller than ¼ x 2 in. and for large sizes to be increased proportionately. On safes larger than 40 in. high, 30 in. wide and 30 in. deep, an additional stiffening of heavy steel at least ¼ in. in thickness and of width proportioned to size but never less than 2 in., must be used at top, bottom and sides. Sheet steel plates to be not less than No. 12 U. S. gauge thickness for the outer shell and not less than No. 14 for the inner shell. Filling to be of cement concrete not less than 5½ in. thick, except that the doors may have 4 in. of concrete and a 2 in. sealed air space. Door to have stepped sides so as to be smoke proof. This space may be used for the lock and bolts. No cast iron to be used in the construction of the safe, except such parts as casters, hinges and flanged door frames.

HOLLOW-CEMENT-BLOCK OR TILE BUILDINGS.

(To rate Buildings.)

1. Use frame basis rate table and apply structural and occupancy charges from brick tariff. When risk is starred, basis rate should be increased from scale in frame instead of brick tariff.
2. Wall thickness should be computed from standard of a stone wall.

(To rate Contents.)

3. Reduce differential in Contents Table, brick tariff, one-half.

(Exposures.)

4. Treat building as brick except as to wall damage, which should be doubled.

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" *b* " Frame Tariff.
" *c* " Exposure Formulas.
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